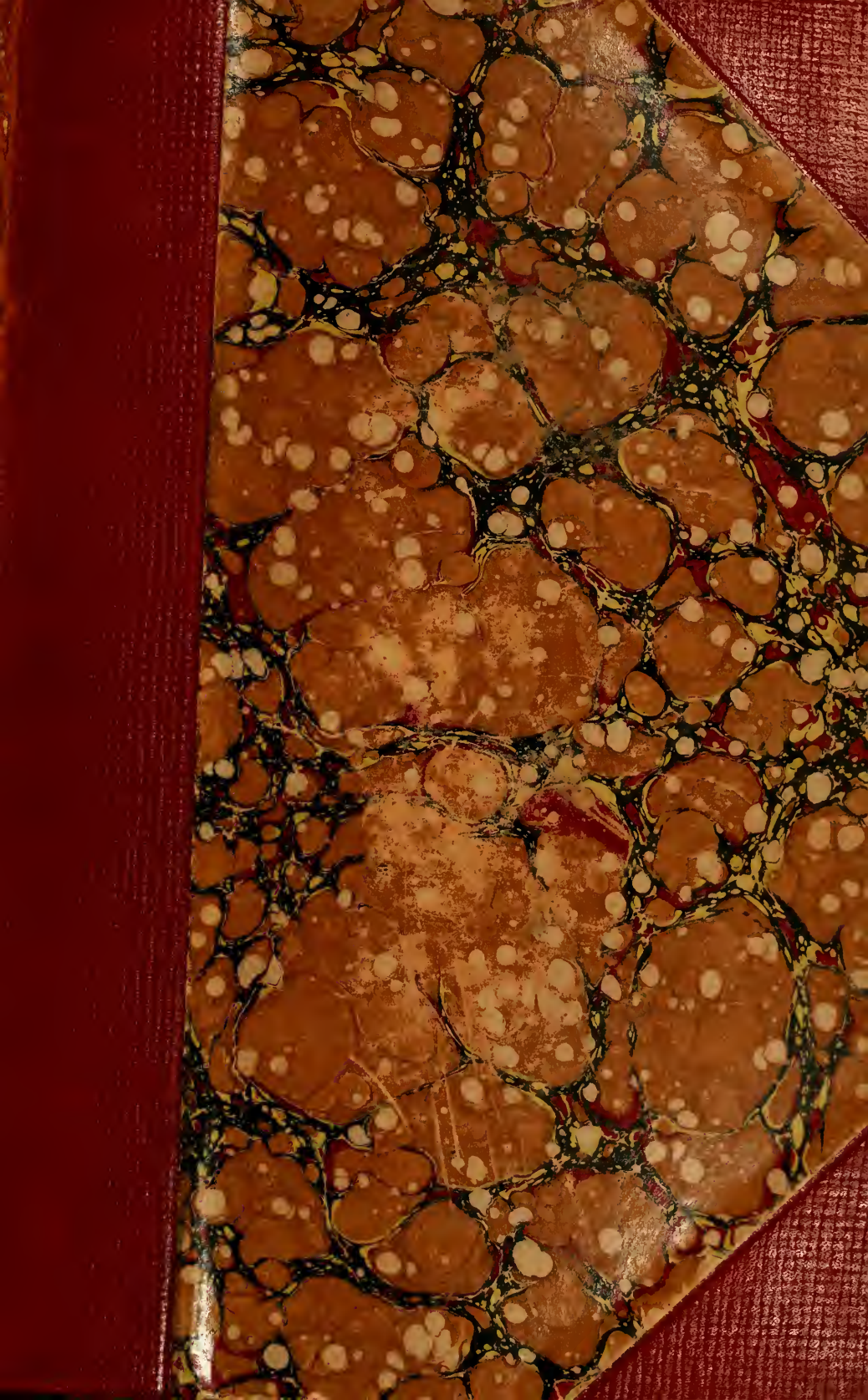

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NATHAN WINSLOW

INDEX

BULLETIN

OF THE

University of Maryland School of Medicine

AND

College of Physicians and Surgeons

Successor to THE HOSPITAL BULLETIN of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons.

VOL. X. JULY, 1925 No. 1

ANNUAL ANNOUNCEMENT.

SESSION 1925-26

CALENDAR

1925 - 1926

SCHOOL OF MEDICINE

1925.

September 21 to 25, Inc.—Examinations for advanced standing.

September 28—Instruction begins with the first scheduled period.

October 5—Last day for registration.

November 11—Holiday (Armistice Day).

November 26—Holiday (Thanksgiving Day.)

December 19—Christmas recess begins after the last scheduled period.

1926.

January 4—Instruction resumed with the first scheduled period.

February 6—Last day for registration (second semester).

February 22—Holiday (Washington's Birthday).

April 1—Easter recess begins after the last scheduled period.

April 6—Instruction resumed with the first scheduled period.

June 5—Commencement Day.

THE UNIVERSITY OF MARYLAND

Control of the University of Maryland is vested in a Board of nine Regents, appointed by the Governor and confirmed by the Senate for terms of nine years each. The general administration of the University is vested in the President. The University Council is an advisory body, composed of the President, the Assistant to the President, the Director of the Agricultural Experiment Station, the Director of the Extension Service, and the Deans. The University Council acts upon all matters having relation to the University as a whole, or to co-operative work between the constituent groups. Each school has its own Faculty Council, composed of the Dean and members of its Faculty; each Faculty Council controls the internal affairs of the group it represents.

The University has the following educational organization:

The College of Agriculture,
The College of Engineering,
The College of Arts and Sciences,
The School of Medicine,
The School of Law,
The School of Dentistry,
The School of Pharmacy,
The College of Education,
The College of Home Economics,
The Graduate School,
The Summer School,
The Department of Physical Education and Recreation,
The School of Business Administration.

The Schools of Medicine, Law, Dentistry, Pharmacy and Business Administration are located in Baltimore; the others in College Park, Maryland.

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University of Maryland School of Medicine

and

College of Physicians and Surgeons.

As a result of the merger accomplished in 1915 the combined schools offer the student the abundant resources of both institutions, and, in addition, by earlier combination with the Baltimore Medical College, the entire equipment of three large medical colleges.

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was chartered in 1807, under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties, of Divinity, of Law, and of Arts and Sciences, and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

Established thus for more than a century, the School of Medicine of the University of Maryland has always been a leading medical college, especially prominent in the South and widely known and highly honored throughout the country.

The beautiful college building at Lombard and Greene Streets, erected in 1814-1815, is the oldest structure in America devoted to medical teaching. Here was founded one of the first medical libraries and the first medical college library in the United States.

Here for the first time in America dissecting was made a compulsory part of the curriculum; here instruction in Dentistry was first given (1837), and here were first installed independent chairs for the teaching of Diseases of Women and Children (1867) and of Eye and Ear Diseases (1873).

The School of Medicine was one of the first to provide for adequate clinical instruction by the erection in 1823 of its own hospital, and in this hospital intramural residency for the senior student was first established.

In 1913, juncture was brought about with the Baltimore Medical College, an institution of 32 years' growth. By this association the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated under Legislative enactment in 1872, and established on Hanover Street in a building afterwards known as the Maternite, the first obstetrical hospital in Maryland. In 1878 union was affected with the Washington University School of Medicine, in existence since 1827, and the College was removed to its present location at Calvert and Saratoga Streets. By this arrangement medical control of the City Hospital, now the Mercy Hospital, was obtained, and on this foundation in 1899 the present admirable college building was erected.

ORGANIZATION OF THE SCHOOL OF MEDICINE

LABORATORY AND CLINICAL FACILITIES.

THE LABORATORIES.

The laboratories are located at two centers, the group of buildings at Greene and Lombard Sts., and the Building at Calvert and Saratoga Sts. The schedule is so adjusted that the laboratory periods are placed with a view of obviating unnecessary movement on the part of the classes. The building known as Gray Laboratory, at Greene and Lombard Sts., houses three departments. The Anatomical Laboratory is placed upon the top floor, where skylights and an auxiliary modern system of electric lighting gives adequate illumination of the subjects. On this floor are the office of the department and the necessary preparation rooms.. The Department of Pharmacology occupies the second floor. There is a large room

for the general student laboratory, which is thoroughly equipped with apparatus of recent acquisition, and in addition contains many instruments of unique and original design. With office and stock-room adjoining, this laboratory is complete for student experimentation. On the first floor of Gray Laboratory is the Department of Physiology. In addition to the large student laboratory, which is constructed for sections of forty-five students, there are rooms for the departmental office, preparation of material, and storage of apparatus. An additional room is devoted exclusively to mammalian experiments. In this building there is maintained an animal room where is kept an abundance of material for experimental purposes. The embalming and storage plant for the Department of Anatomy is in physical connection with the building and its special department. The laboratories of physiology and pharmacology are completely equipped with apparatus lockers so that in accord with the best ideas of instruction, the students work in groups of two each, and each group has sufficient apparatus so that the experimental work can be carried on without delay or recourse to a general stock-room.

The laboratories of Pathology and Biochemistry are located on the third floor of the Dental Building. The former department has a large student laboratory with a capacity of ninety; the tables are so placed as to secure the most satisfactory illumination for microscopic work, in addition, all of the tables are electrically equipped for substage illumination. This equipment is also provided for all laboratories where microscopic work obtains. The museum of the Department of Pathology adjoins the student laboratory. Here are available for demonstration about fifteen hundred carefully prepared and mounted specimens, and for laboratory instruction and study, the material from more than two hundred autopsies with complete clinical histories. Several preparation, research, and office rooms communicate with the other rooms of this department. The laboratory of Biochemistry is constructed and equipped for sections of fifty. The laboratory is completely equipped for the facilitation of work. The office and stock-room adjoin. In the Main Building is the Museum of Anat-

omy, where are arranged for student reference, specimens which represent the careful selection of material over a period of many years. In the University Hospital is the Student Laboratory for the analytical studies of those students who are serving as clinical clerks on the wards. A similar laboratory is maintained in the building at the N. W. corner of Saratoga and Calvert Sts., for the student work on the wards of the Mercy Hospital.

In this latter building are two laboratories for Bacteriology, Histology, and Clinical Pathology, and an additional dissecting room which is used for the course in Topographical Anatomy. The two laboratories accommodate ninety students or the full class, and are equipped with necessary lockers for microscopes and apparatus. Each of the departments housed in this building are provided with their individual offices, preparation, and stockrooms.

CLINICAL FACILITIES.

UNIVERSITY HOSPITAL.

The University Hospital which is the property of the University of Maryland, is the oldest institution for the care of the sick in the State of Maryland. It was opened in September, 1823, under the name of the Baltimore Infirmary, and at that time consisted of but four wards, one of which was reserved for eye cases.

The present hospital has a capacity of 275 beds devoted to general medicine, surgery, obstetrics and the various medical and surgical specialties. It is equipped with a thoroughly modern X-ray department and clinical laboratory, and a postmortem building which is constructed with special reference to the instruction of students in *pathological anatomy.*

The hospital is situated opposite the medical school buildings so that the students lose no time in passing from the lecture halls and laboratories to the clinical amphitheater, dispensary and wards.

Owing to its situation, being adjacent to the largest manufacturing district of the city and the shipping district, large numbers of accident cases are received. These combined with

the cases of many sick seamen and with patients from our own city furnish a large amount of clinical material. Accommodations for thirty obstetrical patients are provided in the hospital for the purpose of furnishing actual obstetrical experience to each member of the graduating class.

In connection with the University Hospital an out-door obstetrical clinic is conducted, in which every case has careful pre-natal supervision, is attended during labor by a physician and graduate nurse—one senior student also being present—and is visited during the puerperium by the attending student and graduate nurse. Careful prenatal, labor and puerperal records are kept, making this work of extreme value to the medical student, not only from the obstetrical standpoint, but in making him appreciate the value of social service and public health work.

During the year ending May 31, 1925, 372 cases were delivered in the hospital and 874 cases in the out-door department. Each student in the graduating class delivered an average of fifteen cases.

The dispensaries associated with the University Hospital and the Mercy Hospital are organized upon a uniform plan in order that the teaching may be the same in each. Each dispensary has the following departments: Medicine, Surgery, Obstetrics, Children, Eye and Ear, Genito-Urinary, Gynecology, Gastro-Enterology, Neurology, Orthopaedics, Proctology, Dermatology, Throat and Nose, Tuberculosis and Psychiatry.

All students in their junior year work in the departments of Medicine and Surgery each day in one of the dispensaries.

All students in their senior year work in the special departments one hour each day.

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Representing Hospital Staff.

PAGE EDMUNDS, M.D. G. CARROLL LOCKARD, M.D.

Representing Medical Alumni.

CHARLES BAGLEY, M.D. G. MILTON LINTHICUM, M.D.

UNIVERSITY HOSPITAL STAFF.

Superintendent of the Hospital, A. J. LOMAS, M.D.

Physicians.

GORDON WILSON, M.D.
CHARLES W. MCELFRESH, M.D.
ROSCOE C. METZEL, M.D.
PAUL W. CLOUGH, M.D.
MAURICE C. PINCOFFS, M.D.
G. CARROLL LOCKARD, M.D.
JOS. E. GICHNER, M.D.
WM. H. SMITH, M.D.

Gastro-Enterologist.

JULIUS FRIEDENWALD, A.M., M.D.

Neurologist.

IRVING J. SPEAR, M.D.

Psychiatrist.

R. M. CHAPMAN, M.D.

Pediatrician.

CHARLES L. SUMMERS, M.D.

Pathologists.

HUGH R. SPENCER, M.D.
S. LLOYD JOHNSON, M.D.
W. J. CARSON, M.D.
PAUL R. ROCKWOOD, M.D.

Surgeons.

RANDOLPH WINSLOW, A.M., M.D., LL.D.
JOSEPH W. HOLLAND, M.D.
NATHAN WINSLOW, M.D.
ARTHUR M. SHIPLEY, M.D., Sc.D.
PAGE EDMUNDS, M.D.
FRANK S. LYNN, M.D.
CHARLES REID EDWARDS, M.D.

Laryngologist.

EDWARD A. LOOPER, M.D.

Proctologists.

G. MILTON LINTHICUM, A.M., M.D.
J. DAWSON REEDER, M.D.

Orthopaedic Surgeons.

R. TUNSTALL TAYLOR, A.B., M.D.
COMPTON RIELY, M.D.

Genito-Urinary Surgeon.

W. H. TOULSON, A.B., M.Sc., M.D.

Roentgenologists.

HENRY J. WALTON, M.D.
HOWARD E. ASHBURY, M.D.

Dermatologist.

HENRY M. ROBINSON, M.D.

Anaesthetists.

S. GRIFFITH DAVIS, M.D.
SAMUEL W. MOORE, DD.S.
W. G. QUEEN, M.D.

Obstetricians.

J. M. H. ROWLAND, M.D.
L. H. DOUGLASS, M.D.
J. G. M. REESE, M.D.
DUDLEY PLEASANTS BOWE, M.D.

Ophthalmologists and Otologists.

HARRY FRIEDENWALD, M. D.
WILLIAM TARUN, M.D.
HIRAM WOODS, A.M., M.D.
J. W. DOWNEY, M.D.

Gynecologists.

J. Mason Hundley, M.D.
Hugh Brent, M.D.
W. S. Gardner, M.D.
R. G. Willse, M.D.

RESIDENT STAFF.

Resident Physician.

T. A. Clawson, M.D.

Assistant Resident Physician.

Edwin M. Robertson, M.D.

Resident Surgeon.

J. Ogle Warfield, M.D.

Assistant Resident Surgeons.

Richard S. Anderson, M.D.

J. R. Bishop, M.D.

Resident Obstetrician.

Frederick A. Snyder, M.D.

Assistant Resident Obstetrician.

Joseph H. Schwab, M.D.

Resident Gynecologist.

Kenneth B. Boyd, M.D.

Resident Pediatrician.

Rachel Korotky, M.D.

Internes.

M. P. Byerly, M.D.
Thomas J. Coonan, M.D.
Eva F. Dodge, M.D.
Lee Wm. Elgin, M.D.
A. C. Fields, M.D.
Wm. B. Gaston, M.D.
Samuel Glick, M.D.
Cecil M. Hall, M.D.
Wm. K. Knotts, M.D.
Lewis C. Richmond, Jr., M.D.
W. E. Lennon, M.D.
A. L. McAnally, M.D.

UNIVERSITY HOSPITAL DISPENSARY STAFF.

Medicine.

H. M. Stein, M.D., *Chief of Clinic.*

H. M. Bubert, M.D.
F. L. Badagliacca, M.D.
D. Corbin Streett, M.D.
B. P. Warner, M.D.
Roscoe C. Metzel, M.D.
L. L. Gordy, M.D.
William Michel, M.D.
A. L. Fehsenfeld, M.D.

Diseases of Stomach and Intestine.

J. H. Ullrich, M.D., *Chief of Clinic.*

Joseph Sindler, M. D.
Z. Morgan, M.D.
M. S. Koppelman, M.D.
N. J. Davidov, M.D.
W. Armstrong, M.D.

Pediatrics.

Charles L. Summers, M.D., *Professor of Pediatrics.*

C. Loring Joslin, M.D., *Chief of Clinic.*

W. H. Ingram, M.D.
H. H. Warner, M.D.
B. J. Ferry, M.D.
W. J. Todd, M.D.
C. R. Goldsborough, M.D.
G. E. Wells, M.D.
F. S. Orem, M.D.
F. B. Smith, M.D.
W. L. Brent, M.D.
W. E. Cole, M.D.
Albert Jaffe, M.D.
J. H. Traband, M.D.
W. G. Geyer, M.D.
H. W. Wheaton, M.D.
C. E. Macke, M.D.
H. J. Dorf, M.D.
H. R. Lickle, M.D.
G. A. Knipp, M.D.
J. J. McGarrell, M.D.
H. A. Rutledge, M.D.

Neurology.

Irving J. Spear, M.D., *Professor of Neurology.*

G. M. Settle, M.D., *Chief of Clinic.*

J. A. Skladowsky, M.D.
B. Pushkin, M.D.

Psychiatry.

R. M. Chapman, M.D., *Professor of Psychiatry.*
H. S. Sullivan, M.D.

Tuberculosis.

C. C. Habliston, M.D., *Chief of Clinic.*

Surgery.

CHARLES REID EDWARDS, M.D., *Chief of Clinic.*

H. M. FOSTER, M.D.
C. A. REIFSCHNEIDER, M.D.
E. S. PERKINS, M.D.
C. F. HORINE, M.D.
E. S. JOHNSON, M.D.
W. R. JOHNSON, M.D.
JAMES BROWN, M.D.
S. H. CULVER, M.D.
J. A. O'CONNOR, M.D.

Orthopaedic Surgery.

R. TUNSTALL TAYLOR, A.B., M.D., *Professor of Orthopaedic Surgery.*
COMPTON RIELY, M.D. *Chief of Clinic.*
W. H. DANIELS, M.D.
H. L. WHEELER, M.D.

Genito-Urinary.

W. H. TOULSON, M.D., *Chief of Clinic.*

HARRIS GOLDMAN, M.D.
J. H. COLLINSON, M.D.
H. T. COLLENBERG, M.D.
MILTON C. LANG, M.D.
H. C. KNAPP, M.D.
L. K. FARGO, M.D.

X-Ray.

HENRY J. WALTON, M.D., *Roentgenologist.*

Dermatology.

H. M. ROBINSON, M.D., *Chief of Clinic.*
J. E. GATELY, M.D.

Gynecology.

R. G. WILLSE, M.D., *Chief of Clinic.*

J. M. HUNDLEY, JR., M.D.
LEO BRADY, M.D.
NATHAN WINSLOW, M.D.
GEORGE L. WISSIG, M.D.

Obstetrics.

L. H. DOUGLASS, M.D. *Chief of Clinic.*

DUDLEY PLEASANTS BOWE, B.A., M.D.
J. G. M. REESE, M.D .
ISADORE A. SIEGEL, M.D.
M. ALEXANDER NOVEY, M.D.
THELMA V. OWEN, M.D.

Eye and Ear.

HARRY FRIEDENWALD, M.D., *Professor of Ophthalmology and Otology.*
J. W. DOWNEY, M.D.
H. L. SINSKY, M.D., *Chief of Clinic.*
CHARLES CAHN, M.D. JOHN G. RUNKEL, M.D.

Nose and Throat.

E. A. LOOPER, M.D., *Clinical Professor of Diseases of Throat and Nose*
FRANK B. ANDERSON, *Chief of Clinic.*
J. G. ALEXANDER, M.D. CHARLES J. NORTON, M.D.

Social Service.

MISS GRACE PEARSON, *Directress.*

UNIVERSITY HOSPITAL DISPENSARY REPORT.

January 1, 1924, to December 31, 1924.

	Cases		
	New	Old	Total
Pediatrics	2,280	17,578	19,858
Dermatology	3,161	3,580	6,741
Medicine	1,105	3,452	4,557
Obstetrics	1,414	4,310	5,724
Surgical	1,975	6,830	8,805
Ophthalmology	1,510	3,325	4,835
Gynecology	1,078	1,648	2,726
Orthopedics	305	3,050	3,355
Nose and Throat	887	932	1,819
Neurology	220	1,136	1,356
Gastro-Enterology	240	759	999
Tuberculosis	223	203	426
Proctology	18	36	54
Psychiatry	151	113	264
Cystoscopy	65	178	243
Genito-Urinary	398	1,196	1,594
	15,030	48,326	63,356

In addition to the above there were treated in the State Venereal Clinic 22,346 patients.

MERCY HOSPITAL.

The Sisters of Mercy first assumed charge of the Hospital at the corner of Calvert and Saratoga Streets then owned by the Washington University, in 1874. By the merger of 1878 the Hospital came under the control of the College of Physicians and Surgeons, but the Sisters continued their work of administering to the patients.

In a very few years it became apparent that the City Hospital, as it was then called, was much too small to accommodate the rapidly growing demands upon it. However, it was not until 1888 that the Sisters of Mercy, with the assistance of the Faculty of the College of Physicians and Surgeons, were able to lay the cornerstone of the present Hospital. This building was completed and occupied late in 1889. Since then the growing demands for more space has compelled the erection of additions, until now there are accommodations for 351 patients.

In 1909 the name was changed from The Baltimore City Hospital to Mercy Hospital.

Mercy Hospital is located in the center of a city of 800,000 inhabitants.

The clinical material in the free wards is under the exclusive control of the Faculty of the University of Maryland School of Medicine and College of Physicians and Surgeons.

It adjoins the College building, and all surgical patients from the public wards are operated upon in the College operating rooms. This union of the Hospital and College buildings greatly facilitates the clinical teaching, as there is no time lost in passing from one to the other.

Mercy Hospital is the hospital of the United Railways and Electric Company of Baltimore City, and receives patients from the Baltimore and Ohio Railroad Company and from the Pennsylvania Railroad Company and its branches.

BOARD OF GOVERNORS

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Sister M. Thomasina	JULIUS FRIEDENWALD, A.M., M.D.
Sister M. Hilda	W. D. WISE, M.D.
Sister M. Beatrice	H. G. BECK, M.D.
Sister M. Florence	F. D. SANGER, M.D.
Sister M. Louise	T. K. GALVIN, M.D.

MERCY HOSPITAL STAFF.

SURGICAL DIVISION.

ARCHIBALD C. HARRISON, M.D. ALEXIUS MCGLANNAN, A.M., M.D., LL.D.
C. F. BLAKE, M.D. W. D. WISE, M.D.

Associate Surgeons.

ELLIOT H. HUTCHINS, M.D. A. M. EVANS, M.D.
R. H. LOCHER, M.D. F. L. JENNINGS, M.D.
THOMAS R. CHAMBERS, M.D. F. X. KEARNEY, M.D.

Assistant Surgeons.

I. O. RIDGLEY, M.D. CHAS. MAXSON, M.D.
N. C. MARVEL, M.D. H. B. MCELWAIN, M.D.
EVERARD BRISCOE, M.D. D. J. PESSAGNO, M.D.

Ophthalmologist and Otologist.

HARRY FRIEDENWALD, M.D.

Associates.

H. K. FLECK, M.D. J. W. DOWNEY, M.D.

Rhinologists and Laryngologists.

FRANK D. SANGER, M.D. GEORGE W. MITCHELL, M.D.

Associate Rhinologists and Laryngologists.

W. F. ZINN, M.D. RAYMOND MCKENZIE, M.D.

Proctologist.

CHARLES F. BLAKE, M.D.

Associate.

L. J. ROSENTHAL, M.D.

Orthopaedic Surgeon.

ALBERTUS COTTON, M.D.

Associate.

H. L. ROGERS, M.D.

Urologists.

A. G. RYTINA, M.D. A. J. GILLIS, M.D.

MEDICAL DIVISION.

Physicians.

MAURICE C. PINCOFFS, M.D.

WILLIAM F. LOCKWOOD, M.D. CARY B. GAMBLE, M.D.
STANDISH MCCLEARY, M.D. H. G. BECK, M.D.

Associates.

HUBERT C. KNAPP, M.D. E. E. MAYER, M.D.
C. C. W. JUDD, M.D. BARTUS T. BAGGOTT, M.D.
J. W. MARTINDALE, M.D. G. MCLEAN, M.D.
LEON FREEDOM, M.D.

Assistant.

H. R. PETERS, M.D.

Gastro-Enterologist.

JULIUS FRIEDENWALD, M.D.

Associates.

T. FREDERICK LEITZ, M.D. THEODORE MORRISON, M.D.

Assistants.

MAURICE FELDMAN, M.D. JOSEPH SINDLER, M.D.

Pediatrcians.

JOHN RUHRAH, M.D. EDGAR B. FRIEDENWALD, M.D.

Assistant.

F. B. SMITH, M.D.

Neurologist and Psychiatrist.

ANDREW C. GILLIS, M.D.

Assistant.

MILFORD LEVY, M.D.

Dermatologist.

MELVIN ROSENTHAL, M.D.

OBSTETRICAL DIVISION.

Obstetricians.

CHARLES BRACK, M.D. GEO. W. DOBBIN, M.D.

Associate Obstetricians.

E. P. SMITH, M.D. T. K. GALVIN, M.D.
J. J. ERWIN, M.D.

GYNECOLOGICAL DIVISION.

Gynecologists.

WILLIAM S. GARDNER, M.D. ABRAHAM SAMUELS, M.D.
GEORGE A. STRAUSS, M.D.

Associate Gynecologists.

T. K. GALVIN, M.D. E. P. SMITH, M.D.

PATHOLOGICAL DIVISION.

Pathologists.

STANDISH MCCLEARY, M.D. HUGH R. SPENCER, M.D.

Clinical Pathologists.

H. T. COLLENBERG, M.D.
JOHN G. HUCK, M.D. EMIL G. SCHMIDT, Ph.D.
Technicians—SISTER M. JOAN, Ph.G., R.N., ANNA CHENOWETH, R.N.

X-RAY DEPARTMENT.

Radiographers.

ALBERTUS COTTON, M.D. HARRY L. ROGERS, M.D.

MERCY HOSPITAL RESIDENT STAFF.

Resident Physicians.

F. B. DART, M.D., *Chief Resident Physician.*
E. C. SWIFT, M.D., *Assistant Resident Physician.*

Resident Surgeons.

H. F. Bongardt, M.D., *Chief Resident Surgeon.*
W. W. Walker, M.D., *Assistant Resident Surgeon.*
J. M. Frehling, M.D., *Assistant Resident Surgeon.*
Emil Adler, M.D., *Assistant Resident Surgeon.*
F. W. Kratz, M.D., *Assistant Resident Surgeon.*
J. E. Norment, M.D., *Assistant Resident Surgeon.*

Resident Gynecologist.

P. G. Mottu, M.D.

Internes.

L. T. Brown, M.D.
R. J. Fields, M.D.
L. H. Gale, M.D.
E. C. Donohue, M.D.
J. P. Keating, M.D.
E. J. Kielar, M.D.
C. M. Lowe, M.D.
Edward Plassnig, M.D.
L. E. Pulaski, M.D.

DISPENSARY STAFF OF MERCY HOSPITAL.

Surgery.

Supervisors.

Alexius McGlannan, M.D.
W. D. Wise, M.D.

Attending Surgeons.

A. M. Evans, M.D.
D. H. Mohr, M.D.
I. O. Ridgely, M.D.
Clyde Marvel, M.D.
Everard Briscoe, M.D.
H. B. McElwain, M.D.

Genito-Urinary Surgery.

A. J. Gillis, M.D.

Orthopaedic Surgery.

Albertus Cotton, M.D.
Harry L. Rogers, M.D.
K. M. Golley, M.D.

Medicine.

Supervisors, Wm. F. Lockwood, M.D., M. C. Pincoffs, S.B., M.D.

Attending Physicians.

Herman Seidel, M.D.
Wetherbee Fort, M.D.
F. N. Hillis, M.D.
B. T. Baggott, M.D.
H. R. Peters, M.D.

Diseases of Stomach.

Supervisor, JULIUS FRIEDENWALD, M.D.

Attending Physicians.

T. FREDERICK LEITZ, M.D.
M. FELDMAN, M.D.
THEODORE H. MORRISON, M.D.
JOSEPH SINDLER, M.D.
S. ZINBERG, M.D.
A. EISENBERG, M.D.
J. N. ZIERLER, M.D.
I. I. LEVY, M.D.
E. E. GREMPLER, M.D.

W. F. ZINN, M.D., *Esophagoscopist.*

Nervous Diseases.

Supervisor, A. C. GILLIS.

Attending Physicians.

MILFORD LEVY, M.D.
R. A. WARNER, M.D.

Diseases of Women.

Supervisors.

W. S. GARDNER, M.D.
A. SAMUELS, M.D.

Attending Surgeons.

E. P. SMITH, M.D.
J. J. ERWIN, M.D.
T. K. GALVIN, M.D.
C. F. J. COUGHLIN, M.D.

Diseases of Nose and Throat.

W. F. ZINN, M.D.
F. A. PACIENZA, M.D.
R. F. MCKENZIE, M.D.
R. J. KEMP, M.D.

Diseases of Eye and Ear.

H. F. FLECK, M.D.
J. I. KEMLER, M.D.
J. W. DOWNEY, M.D.
M. RASKIN, M.D.
F. A. PACIENZA, M.D.

Proctology.

L. J. ROSENTHAL, M.D.

Dermatology.

MELVIN ROSENTHAL, M.D.

Assistant.

WILLIAM G. COPPAGE, M.D.

DISPENSARY AND SOCIAL SERVICE DEPARTMENT.

Sister M. Helen, R. N.

Sister M. Imelda, R. N. Catherine Campbell, R. N.

MERCY HOSPITAL DISPENSARY REPORT.

January 1, 1924, to December 31, 1924.

Sister M. Helen, Directress

Dispensary Clinics	Cases New	Cases Old	Total
Surgical	903	2,159	3,062
Medical	943	1,111	2,054
Gynecological	395	1,270	1,665
Eye and Ear	440	785	1,225
Nose and Throat	653	808	1,461
Neurological	91	317	408
Gastro-Intestinal	148	544	692
Dental	79	70	149
Proctological	31	51	82
Orthopedic	230	1,265	1,495
Dermatological	210	414	624
Genito-Urinary	861	4,160	5,021
	4,984	12,954	17,938

OTHER CLINICAL FACILITIES.

THE BALTIMORE CITY HOSPITAL.

The clinical advantages of the University have been largely increased by the liberal decision of the Board of Supervisors of City Charities to allow the immense material of these hospitals to be used for the purpose of medical education. There are daily visits and clinics in medicine and surgery by the Staff of the Hospitals. The autopsy material is unsurpassed in this country in amount, thoroughness in study, and the use made of it in medical teaching.

The Baltimore City Hospital consists of the following separate hospitals:

The General Hospital, 160 beds.
The Hospital for Chronic Cases, 88 beds.
The Hospital for Tuberculosis, 190 beds.
The Detention Hospital for Insane, 450 beds.

STAFF OF THE BALTIMORE CITY HOSPITAL.

VISITING STAFF.

THOMAS R. BOGGS, S.B., M.D., *Physician-in-Chief.*
ARTHUR M. SHIPLEY, Sc.D., M.D., *Surgeon-in-Chief.*
C. C. HABLISTON, M.D., *Physician-in-Chief to the Tuberculosis Hospital.*
HARRY GOLDSMITH, M.D., *Physician-in-Charge of the Detention Hospital for the Insane.*
FRANK B. KINDELL, A.B., M.D., *Visiting Pathologist.*
LAWRENCE S. OTELL, M.D., *Resident Pathologist.*

CONSULTING STAFF.

Otologist.

WILLIAM TARUN, M.D.

Gynecologists.

R. G. WILLSE, M.D.
J. MASON HUNDLEY, JR., M.A., M.D.

Urologist.

W. H. TOULSON, M.D.

Laryngologists.

H. R. SLACK, M.D.
EDWARD A. LOOPER, M.D.

Pediatrician.

JOHN RUHRAH, M.D.

Neurologist.

HENRY M. THOMAS, M.D.

Psychiatrists.

HENRY J. BERKELY, M.D.
ADOLPH MEYER, M.D.

Orthopedist.

H. L. WHEELER, M.D.

Assistant Visiting Physician.

CHARLES R. AUSTRIAN, M.D.

Assistant Visiting Surgeons.

FRANK S. LYNN, M.D.
C. A. REIFSCHNEIDER, M.D.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN.

This institution contains seventy-five beds for the active treatment of deformities. It is situated at "Radnor Park," a colonial estate of seventy-five acres at Hillsdale, within the western city limits, reached by trolley.

This institution has city, state, endowed and private beds and every modern facility for the treatment of orthopaedic cases as well as a most beautiful park-like environment and farm, and is closely affiliated with the University of Maryland for bed-side instruction.

STAFF.

R. Tunstall Taylor, A.B., M.D., *Surgeon-in-Chief.*

Associate Surgeons.

Sydney M. Cone, A.B., M.D. Albertus Cotton, A.M., M.D.
Compton Riely, M.D.

Dispensary Surgeons.

W. H. Daniels, M.D. Compton Riely, M.D.
H. L. Wheeler, M.D.

Physio-Therapists and Instructors in Corrective Gymnastics.

Miss Anita Renshaw Presstman Miss Elizabeth Emory
Miss Florence Grape
Miss Mary H. Lee, *Principal of School.*
Miss Nora Robinson, *Assistant.*

Rocntgenologists.

Henry J. Walton, M.D. J. F. Lutz, M.D.

Attending Plastic Surgeon.

John Staige Davis, B.Sc., M.D.

Pediatrist.

Benjamin Tappan, B.A., M.D.

Attending Surgeon.

A. M. Shipley, Sc.D., M.D.

Attending Neuro-Surgeon.

CHARLES BAGLEY, JR., M.D.

Attending Laryngologist.

F. B. ANDERSON, M.D.

Attending Dermatologist.

JOHN R. ABERCROMBIE, A.B., M.D.

Attending Pathologist.

HOWARD J. MALDEIS, M.D.

Attending Oculist and Aurist.

WILLIAM TARUN, M.D.

Attending Neurologist.

IRVING J. SPEAR, M.D.

Attending Dentists.

G. E. P. TRUITT, D.D.S. J. B. BELL, D.D.S.
H. M. BLUMENTHAL, D.D.S.

Consulting Surgeons.

J. M. T. FINNEY, A.B., M.D.
RANDOLPH WINSLOW, A.M., M.D., LL.D. ARCHIBALD C. HARRISON, M.D.

Consulting Physicians.

THOMAS R. BROWN, A.B., M.D. LLEWELLYS F. BARKER, A.B., M.D.
THOMAS F. FUTCHER A.B., M.D., WILLIAM S. THAYER, A.B., M.D.

Consulting Oculist.

HIRAM WOODS, M.D., LL.D.

Consulting Largnogolist.

JOHN N. MACKENZIE, A.B., M.D.

Dispensary and social Service Nurse.

MISS MABEL BROWN, R.N.

Head Nurse.

MISS LOUISE SCHAUB, R.N.

Resident Interne.

GORDON BENNETT TAYLOE

ST. VINCENT'S INFANT ASYLUM.

The facilities of this institution, containing 250 infants and children, have been kindly extended to the University of Maryland by the Sisters of Charity. This large clinic enables this school to present to its students liberal opportunities for the study of diseases of infants and children.

STAFF.

Visiting Physician.

CHARLES R. GOLDSBOROUGH, M.D.

Visiting Surgeon.

NATHAN WINSLOW, M.D.

Visiting Obstetrician.

L. H. DOUGLASS, M.D.

Visiting Dermatologist.

JOHN BUCHNESS, M.D.

Visiting Orthopedist.

WILLIAM H. DANIELS, M.D.

INSTITUTIONS FOR THE TREATMENT OF THE INSANE AND FEEBLE-MINDED.

THE SHEPPARD AND ENOCH PRATT HOSPITAL FOR THE INSANE. This institution is one of the most modern hospitals for the treatment and care of the insane in this country. It is well endowed and its superintendent is R. M. Chapman, M. D., Professor of Psychiatry at the University of Maryland. In this hospital intensive treatment and study of mental diseases is carried on, a large number of the patients entering voluntarily. The students under the direction of Dr. Chapman and his assistants in a series of clinics are shown the early manifestations and the various stages of mental diseases, the methods of treatment, and their effects.

SPRING GROVE HOSPITAL. Through the courtesy of the Superintendent of this institution, the Professor of Psychiatry is enabled to present to the weekly clinics to the fourth year class the different types of psychoses and psycho-neuroses.

LIBRARIES.

The University Library, founded in 1813 by the purchase of the collection of Dr. John Crawford, now contains 16,363 volumes, a file of 80 current journals, and several thousand pamphlets and reprints. During the year ending December 31, 1924, 1,059 volumes were added. It is well stocked with recent literature, including books and periodicals of general interest. The home of the Library is Davidge Hall, a comfortable and commodious building in close proximity to the class rooms and the Laboratories of the Medical Department. The Library is open daily during the year, except in August, for use of members of the Faculty, the students, and the profession generally.

The Library of the Medical and Chirurgical Faculty of Maryland, containing 40,000 volumes, is open to the students of the school. The leading medical publications of the world are received by the library and complete sets of many journals are available. Other Libraries of Baltimore are the Peabody (213,000 volumes) and the Enoch Pratt Free Library (459,669 volumes).

All these libraries are open to the students of the school without charge.

ORGANIZATION OF THE CURRICULUM.

The following curriculum is the result of a thorough revision of teaching in this school in order to meet modern requirements. The multiplication of specialties in medicine and surgery necessitates a very crowded course and the introduction of electives will very soon be depended on to solve some of the difficulties.

The curriculum is organized under eleven departments:

1. Anatomy (including Histology and Embryology).
2. Physiology.
3. Bacteriology and Immunology.
4. Biological Chemistry.
5. Pharmacology and Materia Medica.
6. Pathology.
7. Medicine (including Medical Specialties).
8. Surgery (including Surgical Specialties).
9. Obstetrics.
10. Gynecology.
11. Ophthalmology and Otology.

The instruction is given in four years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures and functions of the normal body. Laboratory work occupies most of the student's time during these two years.

Some introductory instruction in Medicine and Surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of instructors insures attention to the needs of each student.

In most courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

DEPARTMENT OF ANATOMY, INCLUDING HISTOLOGY AND EMBRYOLOGY.

C. L. DAVIS, M.D.....Professor of Anatomy
TILGHMAN B. MARDEN, A.B., M.D....Professor of Histology and Embryology
LOUIS C. DOBIHAL, M.D.....Instructor in Histology
J. D. HOLOFCENER, M.D.....Instructor in Histology
EVERARD W. BRISCOE.....Assistant in Anatomy
WM. R. JOHNSON.....Assistant in Anatomy
ROBT. W. JOHNSON.....Assistant in Anatomy

FIRST YEAR. *Didactic.* Five hours each week for thirty-two weeks. Each day, preceding the laboratory period, a quiz and demonstration of from forty to fifty minutes is held, covering the laboratory work for the day.

Laboratory. Eighteen hours each week for thirty-two weeks This course includes a complete dissection of the human body, including the central nervous system. Abundance of good material is furnished and the student is aided in his work by competent demonstrators. Practical examinations are held at frequent intervals throughout the session and each student will be held to strict account for material furnished him. Each student is furnished a skeleton and a deposit is required to insure its return in good condition at the end of the session.

Histology.

FIRST YEAR. Lectures, recitations and laboratory work, ten hours each week during first semester; three hours each week during second semester. The most important part of the work will be done in the laboratory, where each student will be provided with apparatus, staining fluids and material necessary for the preparation of specimens for miscroscopical examination. An important aid to the course is the projection miscroscope and balopticon which are used for the projection upon a screen, of magnified images of the specimens actually used in the laboratory, and of illustrations from standard text books.

Embryology.

Lectures, recitations, and laboratory work; one hour each week during the first semester, and seven hours each week during the second semester.

This course includes the study of the development of the chick and the fundamental principles of mammalian embryology. In the laboratory, the hen's egg will be studied in its various stages of development, and sections of the chick at different periods of incubation will be made and studied microscopically. The latter part of the course will be devoted to the study of sections through different regions of mammalian embryos.

Special emphasis is laid upon the development in the human.

DEPARTMENT OF PHYSIOLOGY.

A. H. RYAN, M.D. ..... Professor of Physiology
CHARLES C. CONSER, M.D. ..... Associate Professor of Physiology
FERDINAND A. RIES, M.D. ..... Associate in Physiology
GEORGE A. KNIPP, M.D. ..... Instructor in Physiology

1. PHYSIOLOGY. The required course consists of lectures, recitations, laboratory work, demonstrations and conferences in the first and second years.

First Year. Two periods weekly of one hour each are given during the second half of the first year. These lectures are devoted to a general survey of the subject; the application of physical and physico-chemical methods to experimental physiology; the application of statistical methods and the presentation of results. The physiology of vision is also covered in lectures, the laboratory work being given in the second year.

Second Year. Three one-hour periods weekly throughout the year are devoted to lectures, recitations and demonstrations. Three hours weekly during the first semester and six hours per week during the second semester are spent in the laboratory. In the laboratory students work in small groups with complete sets of apparatus. The work is arranged to illustrate fundamental principles and at the same time to familiarize the student with methods employed in experimental

physiology and medicine. The laboratory results are discussed at informal conferences. The subjects covered in the didactic and laboratory work include muscle, nerve, electro-physiology, blood, lymph, circulation, respiration, digestion, absorption, secretion, nutrition, internal secretions, nervous system and special senses. A considerable part of the laboratory work is upon mammals. Consultation of original papers at the library is required and current articles are discussed.

2. CLINICAL PHYSIOLOGY. During the second semester of the second year a one-hour clinic is held each week by the Department of Medicine to correlate physiology and medicine and serve as an introduction to the work of the clinical years.

3. RESEARCH. Hours to be arranged. The facilities of the laboratory are available to qualified persons to undertake original investigations.

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY.

FRANK W. HATCHEL, M.D. ..... Professor of Bacteriology
WILLIAM ROYAL STOKES, M.D., Sc.D. ..... Professor of Bacteriology
LOUIS F. KRUMREIN, M.D. ..... Instructor in Bacteriology
J. A. F. PFEIFFER, M.D. ..... Instructor in Bacteriology
HENRY F. BUETTNER, M.D. ..... Instructor in Bacteriology

Instruction in bacteriology is given in the laboratory to the students of the first year during the second semester. This includes the various method of preparation and sterilization of culture media, the study of pathogenic bacteria and the bacteriological examination of water and milk. The bacteriological diagnosis of the communicable diseases is also included in this course. Animal inoculations are made in connection with the bacteria studied. The most important protozoa are also studied in the laboratory. The principles of general bacteriology are taught by quiz, conference and lecture.

The principles of immunology are presented by means of quizzes conferences and lectures to the second year class throughout the first semester and practical experiments are carried out by the class in laboratory sessions of three hours each held twice weekly during the semester.

DEPARTMENT OF BIOLOGICAL CHEMISTRY.

H. Boyd Wylie, M.D.....Professor of Biological Chemistry
Frank N. Ogden, M.D.....Associate in Biological Chemistry
Emil G. Schmidt, Ph.D.....Instructor in Biological Chemistry

Instruction in Biological Chemistry comprises laboratory work, lectures and conferences.

Laboratory Work. The first few weeks of the laboratory work consists in the preparation of normal and standard solutions which requires careful use of the analytical balance and of volumetric glassware. The knowledge gained in this preliminary period is then put to practical application in the making of quantitative determinations of nitrogenous compounds of known nitrogen content. Daily reports are required of each student in this work and a careful record is kept of his ability.

At the end of this period there follows a long course of laboratory work on the chemistry and metabolism of the carbohydrates, proteins and lipins. Each type of foodstuff is considered separately; first its chemistry is studied and then its metabolism. In following this arrangement the usual long stretch of the pure chemistry of all the foodstuffs is eliminated.

Experiments on the tissues of the body then follow, and precede the final group of experiments on bile, milk and those which relate to the more thorough study of blood and urine.

Throughout the laboratory work the older methods have been excluded, and those tests which are duplications of the same principle have been reduced to a minimum. Quantitative tests include only those which are representative and essential. A great deal of stress is laid upon the importance of quantitative and metabolic experiments, so that this type of work constitutes the major part of the laboratory experiments in this course.

Lectures. The lectures precede or run parallel to the laboratory work, as far as possible. The first lectures deal with laboratory technic, the chemistry of solutions and indicators, osmosis, the chemistry of colloids, catalysis, reversible reactions, the law of mass action and a discussion of enzymes. The lectures which follow refer to the chemistry and metabolism

of carbohydrates, proteins and lipins. Relatively less time is given to the discussion of the chemistry of the various foodstuffs and more to the discussion of their metabolism. In these lectures the fundamental principles (biological, physical and chemical) are emphasized, not, however, to the exclusion of the correlation of the normal and abnormal metabolism.

The final lectures relate to the discussions of the secretions, including milk, and of the blood and urine, including the metabolism of inorganic substances, salts and water.

PHARMACOLOGY AND MATERIA MEDICA.

WILLIAM HENRY SCHULTZ, Ph.B., Ph.D.....Professor of Pharmacology
O. G. HARNE, A.B.....Associate Professor of Pharmacology
ESTHER F. KUHN, A.B.....Assistant in Pharmacology
WILLIAM GLENN HARNE.....Assistant in Pharmacology

1. *Materia Medica and Pharmacology.* 56 hours required. The methods now used in presenting the subject matter of Materia Medica and Prescription Writing have evolved as a result of some years of practical teaching. The science of Pharmacology has introduced methods of critical analysis in the choice of drugs proposed for use as medicine. As aids in determining the particular drugs chosen for study, use is made of the "United States Pharmacopoeia" and "New and Non-Official Remedies."

Official titles, whenever practicable, are expressed in English and all quantities are stated in terms of the metric system. The only way to get away from the unscientific system of English weights and measures, and from a Latin system which few ever learn correctly is to refuse to teach either one of them.

When possible, drugs are grouped according to their chemical composition and the influence of various radicals and side chains emphasized, whereas drugs, the chemistry of which is not definitely established, are grouped according to their dominant physiological action. Following the Pharmacology of a given group, their place in practical medicine is indicated, and the student is requested to prescribe same in suitable form. Thus a Materia Medica is developed throughout the course, based upon Pharmacological action of drugs.

2. *Systematic Pharmacology.* 96 hours required. Second year. In this portion of the course, the student is taught Pharmacology as a pure science. The aim is to attain a mean between that which has a purely scientific bearing and that dominantly practical so that both a critical attitude toward drugs, and an understanding of the principles of dosage may be acquired. This is accomplished by lectures, quiz, conference and the following course of laboratory exercises.

3. *Pharmacodynamics.* 96 hours. Second year. This laboratory course runs parallel with Pharmacology 2. Many of the most important problems of Immunology, Parasitic intoxications, and of Chemotherapy are essentially Pharmacological. In the first part of the course the experiments are upon normal animals, hence primarily toxocological in character. In the latter part of the course more and more emphasis is laid upon what is now designated as the chemo-therapeutic index of drugs.

4. *Pharmacology of General and Local Anesthetics and Soporifics.* Four weeks, 3 lectures, 3 laboratory periods a week. This is a special course designed to meet the needs of physician and graduate nurse who wish to acquire a knowledge of the more recent developments in the pharmacology of depressant and sleep producing drugs. The course is so arranged that those properly qualified may continue the work under expert anesthetists in the wards of the hospitals connected with the university. Professor Shultz.

5. *Research in Pharmacology and Chemo-Therapy.* Properly qualified students are admitted to the laboratory with a view to their carrying on original investigations in drug action. Thoroughly equipped laboratories are well adapted for post-graduate study and research in Pharmacology. Hours will be arranged to suit the applicant. Professor Schultz.

DEPARTMENT OF PATHOLOGY.

HUGH R. SPENCER, M.D. ..... Professor of Pathology
STANDISH MCCLEARY, M.D. ..... Professor of Pathology
SYDNEY M. CONE, M.D. ..... Associate Professor of Pathology
WM. J. CARSON, M.D. ..... Associate Professor of Pathology
ALBERT E. GOLDSTEIN, M.D. ..... Instructor in Pathology
M. ALEXANDER NOVEY, M.D. ..... Assistant in Pathology
LAWRENCE S. OTELL, M.D. ..... Assistant in Pathology

Courses of instruction in Pathology are given during the second and third years. These courses are based on previous study of normal structure and function and aim to outline the natural history of disease. Instruction is made as practical as possible that the student may become familiar with the appearance of tissues in disease and may be able to correlate anatomical lesions with clinical symptoms and signs.

1. *General Pathology and Histo-Pathology.* This course is given to second year students. It includes the study and demonstration of disturbances of the body fluids, disturbances of structure, nutrition and metabolism of cells, disturbances of fat, carbohydrate and protein metabolism, disturbances in pigment metabolism, inflammation and tumors. The laboratory course consists in a daily preliminary talk on the subject for study, following which the student takes up the study of microscopical sections. Gross material from autopsy and from the museum is demonstrated in conjunction with the microscopical sections.

2. *Applied Pathology, Including Gross Morbid Anatomy and Morbid Physiology.* Third year students: In this course the special relationship of the gross and microscopical lesions to clinical symptoms and signs is emphasized. Fresh material from autopsy collected at the various hospitals is demonstrated and supplemented by a study of the respective autopsy protocols.

3. *Autopsies.* Third Year. Autopsy technic is taught to small groups of students by special instruction at autopsies performed at the various hospitals. Students are required to assist at the autopsy, study the organs, examine the microscopical sections, make cultures and prepare autopsy protocols.

4. *Clinical Pathological Conference.* Fourth Year. In collaboration with the Department of Medicine. Material from autopsies is studied with reference to the correlation of the clinical aspects with the pathological findings.

5. *Advanced Work in Pathology.* Properly qualified students will be permitted to carry out advanced or research work along the lines of experimental pathology.

DEPARTMENT OF MEDICINE.

MAURICE C. PINCOFFS, B.S., M.D.....Professor of Medicine
GORDON WILSON, M.D.....Professor of Medicine
CARY B. GAMBLE, JR., A.M., M.D.....Professor of Medicine
STANDISH MCCLEARY, M.D....Professor of Pathology and Clinical Medicine
JOS. E. GICHNER, M.D.....Professor of Clinical Medicine
CHARLES W. MCELFRESH, M.D.....Professor of Clinical Medicine
G. CARROLL LOCKARD, M.D.....Professor of Clinical Medicine
HARVEY G. BECK, Sc.D., M.D.....Professor of Clinical Medicine
PAUL W. CLOUGH, B.S., M.D.....Associate Professor of Medicine
C. C. W. JUDD, A.B., M.D.....Associate Professor of Medicine
SYDNEY R. MILLER, M.D.....Associate Professor of Medicine
H. D. MCCARTY, M.D.....Associate Professor of Clinical Medicine
WM. H. SMITH, M.D.....Associate Professor of Clinical Medicine
H. J. MALDEIS, M.D.....Associate Professor of Medical Jurisprudence
S. LLOYD JOHNSON, A.B., M.D.....Assistant Professor of Medicine
HARRY M. STEIN, M.D.....Assistant Professor of Medicine
JOHN G. HUCK, M.D.....Assistant Professor of Medicine
GEORGE MCLEAN, M.D.....Assistant Professor of Medicine
R. C. METZEL, M.D.....Associate in Clinical Medicine
W. I. MESSICK, M.D.....Associate in Clinical Medicine
L. A. M. KRAUSE, M.D.....Associate in Medicine
C. C. HABLISTON, M.D.....Associate in Medicine
E. E. MAYER, M.D.....Instructor in Medicine
D. CORBIN STREETT, M.D.....Instructor in Medicine
J. W. MARTINDALE, M.D.....Instructor in Medicine
HENRY SHEPPARD, M.D.....Instructor in Medicine
BARTUS T. BAGGOTT, M. D.....Instructor in Medicine
LEON FREEDOM, M.D.....Instructor in Medicine
H. R. PETERS, M.D.....Instructor in Medicine
WILLIAM MICHEL, M.D.....Instructor in Medicine
H. M. BUBERT, M.D.....Instructor in Medicine
PAUL R. ROCKWOOD, M.D.....Instructor in Medicine
WETHERBEE FORT, M.D.....Assistant in Medicine
M. G. GICHNER, M.D.....Assistant in Medicine
L. L. GORDY, M.D.....Assistant in Medicine
F. L. BADAGLIACCA, M.D.....Assistant in Medicine
FREDERICK B. DART, M.D.....Assistant in Medicine

GENERAL OUTLINE.

SECOND YEAR

Introduction to clinical medicine.

(a) Introductory physical diagnosis.
(1 hour a week, first semester).
(2 hours a week, second semester).

(b) Clinical lectures on pathological physiology.
(1 hour a week, second semester).

THIRD YEAR.

I. The methods of examination (13 hours a week).
   (a) History taking.
   (b) Physical diagnosis.
   (c) Clinical pathology.

   These subjects are taught and practiced in the out-patient department and in the clinical laboratory.

II. The principles of medicine (7 hours a week).
   (a) Lectures, clinics and demonstrations in general medicine, neurology, pediatrics and preventive medicine.

III. The principles of therapeutics (2 hours a week).
   Lectures and demonstrations in general therapeutics, physical therapeutics and materia medica.

FOURTH YEAR.

The practice of medicine.

I. Clinical clerkship on the medical wards.
   (26 hours a week for ten weeks).
   (a) Responsibility, under supervision, for the history, physical examination, laboratory examinations and progress notes of assigned cases.
   (b) Ward classes in general medicine, the medical specialties, and therapeutics.

II. Clinics in general medicine and the medical specialties
   (6 hours a week).

III. Dispensary work in the medical specialties.

IV. Clinical pathological conferences (1 hour a week).

Medical Dispensary Work.

The medical dispensaries of both the Mercy and the University Hospitals are utilized for teaching in the third year. Each student spends two periods a week of two hours each in dispensary work. The work is done in groups of four to six students under an instructor. Systematic history taking is especially stressed. Physical findings are demonstrated. The student becomes familiar with the commoner acute and chronic disease processes.

Physical Diagnosis.

SECOND YEAR. Didactic lectures and practical demonstrations in topographical anatomy and normal physical signs.

THIRD YEAR. The class is divided into small groups, and each section receives instruction for four hours a week for the entire session in the medical dispensaries of the hospitals. The large clinical material of the dispensaries and hospitals is utilized to give each student the opportunity to familiarize himself with the common types of bodily structure, with the normal variations in physical signs and with the physical signs of the chief pulmonary, circulatory and abdominal diseases.

Tuberculosis.

During the third year in connection with the instruction in physical diagnosis a practical course is given weekly to sections of the class at the Municipal Tuberculosis Hospital. Stress is laid upon the recognition of the physical signs of the disease, as well as upon its symptomatology and gross pathology.

Therapeutics.

THIRD YEAR. General therapeutics and materia medica are taken up and an effort is made to familiarize the student with the practical treatment of disease. The special therapy of the chief diseases is then reviewed. Two hours a week. Dr. Lockard.

The principles of physical therapy are taught in a special lecture and demonstration course consisting of six one-hour periods. Dr. Gichner.

FOURTH YEAR. Special consideration is given to the practical application of therapeutic principles in bedside teaching and the chief therapeutic methods are demonstrated.

CLINICAL PATHOLOGY.

JOHN G. HUCK, M.D. ..... Head of Department / Assistant Professor of Medicine
H. J. MALDEIS, M.D. ..... Associate Professor of Medical Jurisprudence
S. R. MILLER, M.D. ..... Associate Professor of Medicine
L. A. M. KRAUSE, M.D. ..... Associate in Medicine
H. R. PETERS, M.D. ..... Instructor in Medicine
M. G. GICHNER, M.D. ..... Assistant in Medicine

During the third year the student is thoroughly drilled in the technique of the usual clinical laboratory work, so that he

is able to perform all routine examination which may be called for during his fourth year, in connection with the work in the wards and dispensary.

The practical work is supplemented by a series of didactic lectures and demonstrations in which the entire teaching staff of the department takes an active part. The microscopical and chemical study of blood, exudates and transudates, gastric juice, spinal fluid, feces and urine are successively taken up, and special attention directed to the clinical significance of the findings.

Clinical parasitology from the standpoint of the infecting agent and the carrier is given careful consideration.

The entire course is thoroughly practical. Each student is provided with a microscope, blood counters and hemoglobinometer for his exclusive use, and every two students with a special laboratory outfit for all routine purposes.

During the fourth year the student applies what he has learned during the preceding year in the laboratories of the various affiliated hospitals. He is also supplied with a laboratory outfit which is sufficiently complete to enable him to work independently of the general equipment. Special instructors are available during certain hours to give necessary assistance and advice.

GASTRO-ENTEROLOGY.

Julius Friedenwald, A.M., M.D.	Professor of Gastro-Enterology
T. Fred Leitz, M.D.	Clinical Professor of Gastro-Enterology
J. Harry Ullrich, M.D.	Assistant Professor of Gastro-Enterology
Theodore H. Morrison, M.D.	Assistant Professor of Gastro-Enterology
Maurice Feldman, M.D.	Associate in Gastro-Enterology
Joseph Sindler, M.D.	Instructor in Gastro-Enterology
Z. Morgan, M.D.	Instructor in Gastro-Enterology
M. S. Koppelman, M.D.	Assistant in Gastro-Enterology
N. J. Davidov, M.D.	Assistant in Gastro-Enterology
Albert Eisenberg, M.D.	Assistant in Gastro-Enterology
I. S. Zinberg, M.D.	Assistant in Gastro-Enterology
W. E. Grempler, M.D.	Assistant in Gastro-Enterology
Joseph N. Zierler, M.D.	Assistant in Gastro-Enterology

Fourth Year. Clinics, recitations and demonstrations to the class for one hour a week throughout the session. Dispen-

sary instruction to small groups throughout the entire session. Practical instruction in the differential and clinical diagnosis and demonstrations of the newer methods of diagnosis in gastro-intestinal affections.

PSYCHIATRY.

R. M. Chapman, M.D. ..... Professor of Psychiatry
Harry Goldsmith, M.D. ..... Instructor in Psychiatry
H. S. Sullivan, M.D. ..... Associate in Psychiatry

Third Year. In the third year the student attends fifteen clinical lectures and five clinics which are designed to be introductory to the more intensive work in psychiatry in the fourth year.

Fourth Year. The class is divided into sections for clinical conferences on selected groups of cases. Each student works for a short period as assistant in the Mental Hygiene Clinic and thus gains practical experience of the problems of history taking, examination, and the care of psychiatric patients.

PEDIATRICS.

John Ruhrah, M.D. ..... Professor of Pediatrics
Charles L. Summers, M.D. ..... Professor of Pediatrics
Edgar R. Friedenwald, M.D. ..... Clinical Professor of Pediatrics
C. Loring Joslin, M.D. ..... Assistant Professor of Pediatrics
W. H. Ingrim, M.D. ..... Associate in Pediatrics
H. H. Warner, M.D. ..... Associate in Pediatrics
W. J. Todd, M.D. ..... Instructor in Pediatrics
John H. Traband, M.D. ..... Instructor in Pediatrics
William F. Geyer, M.D. ..... Instructor in Pediatrics
I. J. Feinglos, M.D. ..... Instructor in Pediatrics
W. E. Brent, M.D. ..... Instructor in Pediatrics
Clarence E. Macke, M.D. ..... Instructor in Pediatrics
Bernard J. Ferry, M.D. ..... Assistant in Pediatrics
Charles Goldsborough, M.D. ..... Assistant in Pediatrics
George E. Wells, M.D. ..... Assistant in Pediatrics
F. Stratner Orem, M.D. ..... Assistant in Pediatrics
H. Whitney Wheaton, M.D. ..... Assistant in Pediatrics
H. J. Dorf, M.D. ..... Assistant in Pediatrics
H. R. Lickle, M.D. ..... Assistant in Pediatrics
F. B. Smith, M.D. ..... Assistant in Pediatrics
G. A. Knipp, M.D. ..... Assistant in Pediatrics
J. J. McGarrell, M.D. ..... Assistant in Pediatrics

W. E. Cole, M.D. ..... Assistant in Pediatrics
H. A. Rutledge, M.D. ..... Assistant in Pediatrics
Albert Jaffe, M.D. ..... Assistant in Pedriatics
Thelma V. Owen, M.D. ..... Assistant in Pedriatics

Third Year. Instruction during the third year consists of one lecture each week in which infant feeding and the most important diseases of infancy and childhood are especially emphasized. Drs. Ruhrah, Summers and Friedenwald.

Fourth Year. During this year a weekly clinical lecture is given where the character of disease is fully demonstrated and the students are afforded an opportunity for personal examination of all cases. In addition ward classes are held weekly where bedside instruction is given. A section of the class also works daily at the Babies' and Children's Clinic. This clinic, which is under the direction of Dr. Summers, has a yearly attendance of more than twenty thousand, and offers an excellent opportunity for study and observation of a wide variety of cases under competent instructors.

Instruction is also given in the Children's Dispensary at the Mercy Hospital.

NEUROLOGY.

Irving J. Spear, M.D. ..... Professor of Neurology
Andrew C. Gillis, A.M., M.D. ..... Professor of Neurology
G. M. Settle, A.B., M.D. ..... Associate Professor of Neurology
Benjamin Pushkin, M.D. ..... Associate in Neurology
Milford Levy, M.D. ..... Instructor in Neurology
J. A. Skladowsky, M.D. ..... Assistant in Neurology

Third Year. Lectures and recitations one hour each week to the entire class. By means of didactic lectures and clinical conferences there are considered the commoner types of diseases of the nervous system, the methods of neurological examination, and the relationship of signs and symptoms to pathological conditions. The material at University and Mercy Hospitals is available.

Fourth Year. Clinical Conference, one hour each week to the entire class. This subject is taught at the University and Mercy Hospitals. All cases presented at these clinics are carefully examined; complete written records are made by the stu-

dents who demonstrate the cases before the class. These cases are usually assigned one or two weeks before they are presented, and each student in the class must prepare one or more cases during the year.

Ward Class Instruction: In small sections at the University and Mercy Hospitals. In these classes the students come in close personal contact with the cases in the wards under the supervision of the instructor.

Dispensary Instruction: Small sections are instructed in the dispensaries of the University and Mercy Hospitals four afternoons each week. In this way students are brought into contact with nervous diseases in their earlier as well as later manifestations.

HYGIENE AND PREVENTIVE MEDICINE.

C. Hampson Jones, M.D., C.M.....Professor of Hygiene and Public Health
Birckhead McGowan, M.D.....Instructor in Hygiene and Public Health
J. F. Hogan, M.D.....Instructor in Hygiene and Public Health

Third Year. Two lectures a week throughout the session. The lectures will encompass the fundamental subjects: Air, Water, Soil, Food, Disposal of Wastes, Communicable Diseases, State and Federal Public Health Laws, and Industrial Diseases. Small groups visit the Sydenham Hospital weekly and are given practical instruction in the diagnosis, treatment and isolation of the contagious diseases.

Fourth Year. Small groups visit the City Board of Health Laboratories for practical instruction in the laboratory field and administrative aspects of public health work.

MEDICAL JURISPRUDENCE.

H. J. Maldeis, M.D.....Associate Professor of Medical Jurisprudence
Baltimore City Post Mortem Physician

Fourth Year. Course of six lectures.

Inasmuch as Medical Jurisprudence teaches the application of every branch of medical knowledge to the needs of the law, civil or criminal, this course embraces the following: Proceedings in criminal and civil prosecution; medical evidence and testimony; identity in its general relations; sexual abnormali-

ties; personal identity; impotence and sterility; rape; criminal abortions; signs of death; wounds in their medico-legal relations; death, natural and homicidal; malpractice; insanity and medico-legal autopsies.

DEPARTMENT OF SURGERY.

ARTHUR M. SHIPLEY, Sc.D., M.D.....Professor of Surgery
ARCHIBALD C. HARRISON, M.D.....Professor of Surgery
ALEXIUS MCGLANNAN, A.M., M.D.....Professor of Surgery
JOSEPH H. BRANHAM, M.D.....Professor of Clinical Surgery
NATHAN WINSLOW, A.M., M.D.....Clinical Professor of Surgery
PAGE EDMUNDS, M.D.....Clinical Professor of Industrial Surgery
WALTER D. WISE, M.D.....Clinical Professor of Surgery
JOSEPH W. HOLLAND, M.D.....Clinical Professor of Surgery
FRANK S. LYNN, M.D.....Clinical Professor of Surgery
ELLIOTT H. HUTCHINS, A.M., M.D.....Associate Professor of Surgery
THOMAS R. CHAMBERS, A.M., M.D.....Associate Professor of Surgery
R. W. LOCHER, M.D.....Assoc'te Professor of Operative and Clinical Surgery
CHARLES REID EDWARDS, M.D.....Associate Professor of Surgery
E. H. HAYWARD, M.D.....Associate in Surgery
A. M. EVANS, M.D.....Associate in Surgery
F. L. JENNINGS, M.D.....Associate in Surgery
E. S. JOHNSON, M.D.....Associate in Surgery
C. A. REIFSCHNEIDER, M.D.....Associate in Surgery
H. M. FOSTER, M.D.....Instructor in Surgery
F. X. KEARNEY, M.D.....Instructor in Surgery
CHARLES W. MAXSON, M.D.....Instructor in Surgery
MARTIN J. HANNA, M.D.....Instructor in Surgery
J. M. HUNDLEY, JR., M.D.....Instructor in Surgery
DWIGHT MOHR, M.D.....Assistant in Surgery
WM. R. GERAGHTY, M.D.....Assistant in Surgery
S. DEMARCO, M.D.....Assistant in Surgery
CLYDE MARVEL, M.D.....Assistant in Surgery
EVERARD BRISCOE, M.D.....Assistant in Surgery
I. O. RIDGELY, M.D.....Assistant in Surgery
H. B. MCELWAIN, M.D.....Assistant in Surgery
C. F. HORINE, M.D.....Assistant in Surgery
D. J. PASSAGNO, M.D.....Assistant in Surgery
J. G. ONNEN, M.D.....Assistant in Surgery
W. R. JOHNSON, M.D.....Assistant in Surgery
MONTE EDWARDS, M.D.....Assistant in Surgery

The teaching is in the Anatomical Laboratory and the dispensaries, wards, clinical laboratories and operating rooms of the University and Mercy Hospitals, and in the wards and dead-house of the Baltimore City Hospital.

Instruction is given by means of lectures, recitations, dispensary work, bed-side instruction, ward classes, and clinics. The work begins in the second year, and continues throughout the third and fourth years.

Second Year.

Topographic and Surgical Anatomy. 10 hours a week for the first semester. The course is designed to bridge the gap between anatomy in the abstract, and clinical anatomy as applied to the study and practice of medicine and surgery.

The teaching is done in the anatomical laboratory, and students are required to demonstrate all points, outlines, and regions on the cadaver. Underlying regions are dissected when necessary to bring out outlines and relations of structures. Didactic lectures two hours weekly, augmented by demonstrations with specimens, charts, and cross-sections. Dr. Holland, assisted by Drs. Foster, Hanna, Brady and Horine.

Principles of Surgery. This course includes history taking, records of physical examinations and of operations and progress notes; the preparation of surgical dressings, suture materials and solutions. It includes inflammation, infections, ulcers, gangrene, fistulae and sinuses, hemorrhage and shock; the use of splints, bed frames, bone plates, bone grafts, etc., local anaesthesia and the prepartion of patients for operations. Lectures and conferences. 2 hours per week for one semester to the entire class. Dr. Edwards.

Third Year.

General and Regional Surgery. Principles of surgery and general surgery, three hours a week throughout the year to the entire class, lectures, recitations and clinics. Dr. Shipley.

The class is divided into groups and receives instruction in history-taking, gross pathology, and surgical diagnosis—at the bedside and in the deadhouse of the Baltimore City Hospital. Drs. Shipley, Lynn and Reifschneider.

Operative Surgery. Instruction is given in operative surgery upon the cadaver and on dogs. The class is divided into

sections, and each section is given practical and individual work under the supervision of the instructors. Dr. Frank S. Lynn, assisted by Drs. Nathan Winslow, Locher, Hayward, E. S. Johnson, Edwards, Foster, Reifschneider, Geraghty, Demarco, Kearney, Briscoe, Horine, Pessagno and Onnen.

Fractures and Dislocations. Twenty-four hours to the entire class. This course consists of instruction in the various forms of fractures and dislocations and their treatment, and serves as a preparatory course for clinical work. Drs. Wise and Jennings.

Surgical Dispensary. Under supervision, the student takes the history, makes the physical examinations, attempts the diagnosis, and, as far as possible, carries out the treatment of the ambulatory surgical cases in the University and in the Mercy Hospitals. Mercy Hospital—Drs. Dwight Mohr, Ridgley, Passagno, Briscoe and McElwain. University Hospital—Drs. Holland, Lynn, Nathan Winslow, Edwards, E. S. Johnson and Foster.

Fourth Year.

Clinics. A weekly clinic will be given at the Mercy and at the University Hospitals to one-half the class throughout the year. As far as possible this is a diagnostic clinic. Mercy Hospital—Drs. Harrison and McGlannan. University Hospital—Dr. Shipley.

Surgical Pathology. A weekly exercise of one hour at Mercy Hospital for one semester, at which specimens from the operating-room and museum are studied in the gross and microscopically, in relation with the case history. Dr. McGlannan.

Industrial Surgery. Operative and post-operative treatment of accident cases, with instructions as to the relationship between the state, the employee, the employer, and the physician's duty to each. One hour a week to sections of the class throughout the year. Dr. Edmunds.

Clinical Clerkship. The personal study of assigned hospital patients, under supervision of the staffs of University and of Mercy Hospitals, history taking, and physical examination of patients, laboratory examinations, attendance at operations and observation of post-operative treatment.

Ward Classes. Ward class instruction in small groups will consist of ward rounds, surgical diagnosis, treatment and the after care of operative cases. Mercy Hospital—Drs. Harrison, McGlannan, Wise, Elliot Hutchins, Evans and Chambers. University Hospital—Drs. Shipley, Holland, Edmunds, Lynn and Edwards.

ANAESTHESIA.

Second Year.

Lectures on history of anaesthesia: Ancient and Modern. General physiology of anaesthesia. Special physiology of each anaesthetic agent. Different methods for producing general anaesthesia, with a detailed description of each. The selection of the anaesthetic and method best suited for its administration in particular cases. Difficulties and accidents during and following anaesthesia, their causes, prevention and control. Different methods of resuscitation. Blood pressure: Its significance and bearing on selection of the anaesthetic and use as a guide during anaesthesia.

Eight hours to the entire class. Drs. S. Griffith Davis and W. G. Queen.

Fourth Year.

During the clinics and operations before small groups, each student will be required to observe the administration of anaesthetics and to keep a chart recording blood pressure, pulse and respiration under the direction of an instructor.

DERMATOLOGY.

T. Caspar Gilchrist, M.R.C.S., M.D. ..... Professor of Dermatology
Melvin Rosenthal, M.D. ..... Associate Professor of Dermatology
John R. Abercrombie, A.B., M.D. ..... Associate in Dermatology
Harry M. Robinson, M.D. ..... Associate in Dermatology
Joseph E. Gately, M.D. ..... Instructor in Dermatology
A. C. Monninger, M.D. ..... Assistant in Dermatology

Clinical conferences one hour each week to entire class. This course will consist of demonstrations of the common diseases of the skin. Dr. Gilchrist.

Dispensary instruction, University Hospital, Mondays, Wed-

nesdays and Fridays in the diagnosis and treatment of the common skin diseases. Drs. Abercrombie, Robinson and Gately. Dispensary instruction, Mercy Hospital. Dr. Rosenthal.

ORTHOPAEDIC SURGERY.

R. TUNSTALL TAYLOR, A.B., M.D.....Professor of Orthopaedic Surgery
ALBERTUS COTTON, A.M., M.D.....Professor of Orthopaedic Surgery
COMPTON RIELY, M.D.....Clinical Professor of Orthopaedic Surgery
W. H. DANIELS, M.D.....Associate in Orthopaedic Surgery
H. L. WHEELER, M.D.....Instructor in Orthopaedic Surgery
H. L. ROGERS, M.D.....Assistant in Orthopaedic Surgery

In this course didactic, clinical, bed-side and out-patient instruction will be given. This instruction is provided in the University Hospital Amphitheater and in the Dispensary, Mercy Hospital and Dispensary and Kernan Hospital and Industrial School for Crippled Children at "Radnor Park," and in the Dispensary of same at 620 West Lombard Street.

Lectures, clinics and quizzes will be held at each of the hospitals once a week. In addition, a weekly bedside clinic will be held for small sections of the class at "Radnor Park."

The course will cover instruction in special methods and instruments required in this surgical specialty, including X-Ray interpretation; Wolff's law; tuberculosis of bones and joints; deformities of the feet; non-tuberculous affiiction of bone and joints; the paralyses; the bursal, tendinous and muscular conditions producing orthopaedic affections; rickets, scurvy; osteomalacia; chondro-dystrophies; wry-neck and the use and application of orthopaedic apparatus.

ROENTGENOLOGY AND RADIOTHERAPY.

HENRY J. WALTON, M.D.....Professor of Roentgenology
ALBERTUS COTTON, M.D.....Professor of Roentgenology
CHARLES REID EDWARDS, A.B., M.D.....Associate in Radio Therapy
HOWARD E. ASHBURY, M.D.....Associate in Roentgenology

Instruction is given in the history, physics, and practical application of Roentgen Rays and Radium. Especial effort is made to demonstrate the use of the Roentgen Ray in diagnosis by instruction in both fluoroscopy and plate reading. The sec-

tions of the fourth year class receive two hours instruction each week.

The student is also taught the practical application of Radium and Roentgen Rays as therapeutic agents. In the X-Ray laboratory and in the hospital wards students are shown the use of these agents in the treatment of disease.

DISEASES OF THE THROAT AND NOSE.

EDWARD A. LOOPER, M.D.,
Clinical Professor of Diseases of the Throat and Nose
W. F. ZINN, M.D.....Associate Professor of Diseases of Throat and Nose
FRANK B. ANDERSON, M.D.....Associate in Diseases of the Throat and Nose
R. F. MCKENZIE, M.D.....Instructor in Diseases of the Throat and Nose
R. J. KEMP, M.D.....Assistant in Diseases of the Throat and Nose

THIRD YEAR. Instruction to entire class is given in the common diseases of the nose and throat, attention being especially directed to infections of the accessory sinuses, the importance of focal infections in the etiology of general diseases and modern methods of diagnosis. Lectures are illustrated by lantern slides. Dr. Looper.

FOURTH YEAR. Dispensary instruction daily to small sections at the University and the Mercy Hospitals. The student is given opportunity to study, diagnose and treat practical cases under an instructor. Ward classes and clinical demonstrations are given one and one-half hours weekly throughout the session in the University and the Mercy Hospitals.

GENITO-URINARY DISEASES.

ANTON G. RYTINA, A.B., M.D.....Professor of Genito-Urinary Diseases
W. H. TOULSON, A.B., M.Sc., M.D.
Associate Professor of Genito-Urinary Diseases
HARRIS GOLDMAN, M.D.....Associate in Genito-Urinary Diseases
A. J. GILLIS, M.D.....Instructor in Genito-Urinary Diseases
L. K. FARGO, M.D.....Instructor in Genito-Urinary Diseases
H. C. KNAPP, M.D.....Assistant in Genito-Urinary Diseases
H. T. COLLENBERG, M.D.....Assistant in Genito-Urinary Diseases
J. H. COLLISON, M.D.....Assistant in Genito-Urinary Diseases
MONTE EDWARDS, M.D.....Assistant in Genito-Urinary Diseases

THIRD YEAR. 8 hours to the entire class. This course is a didactic one in the principles of Genito-Urinary Surgery. Dr. Toulson.

FOURTH YEAR. The course includes urethroscopy, cystoscopy, ureter catheterization, renal functional tests, urography, urine cultures, etc. The teaching consists of clinics in the amphitheater, ward rounds, and attendance by members of the Senior class upon out patients in the dispensary. The dispensary classes are carried on both at the Mercy and the University hospital dispensaries. In the latter institution, the Maryland State Department of Health conducts a venereal disease clinic, in which 22,346 visits were paid last year. Every variety of venereal disease is here encountered, and this rich wealth of material is available for teaching purposes. In addition to this, a cystocopic clinic is conducted in another part of the dispensary, where the students are given practical instruction in the modern diagnostic methods.

DISEASES OF THE COLON AND RECTUM

G. MILTON LINTHICUM, A.M., M.D.,
Professor of Diseases of Rectum and Colon
CHARLES F. BLAKE, M.D.....Professor of Diseases of Rectum and Colon
J. DAWSON REEDER, M.D.,
Associate Professor of Diseases of Rectum and Colon
L. J. ROSENTHAL, M.D.,
Associate Professor of Diseases of Rectum and Colon

THIRD YEAR. 6 hours to the entire class. This course is for instruction in the diseases of the colon, sigmoid flexure, rectum and anus, and will cover the essential features of the anatomy and physiology of the large intestine as well as the various diseases to which it is subject. Dr. Linthicum.

The class is divided into sections for clinical instruction in the Baltimore City Hospital. Dr. Linthicum.

FOURTH YEAR. Ward and Dispensary instruction is given in the University and Mercy Hospitals where different phases of the various diseases are taught by direct observation and examination. The use of the proctoscope and sigmoidoscope and examination of the rectum and sigmoid is made familiar to each student. Mercy Hospital—Drs. Blake and Rosenthal. University Hospital—Drs. Linthicum and Reeder.

DEPARTMENT OF OBSTETRICS.

J. M. H. Rowland, M.D. ..... Professor of Obstetrics
George W. Dobbin, M.D. ..... Professor of Obstetrics
Bernard Purcell Muse, M.D. ..... Professor of Clinical Obstetrics
Charles E. Brack, M.D. ..... Clinical Professor of Obstetrics
L. H. Douglass, M.D. ..... Associate Professor of Obstertics
J. McF. Bergland, M.D. ..... Associate Professor of Obstetrics
E. P. Smith, M.D. ..... Associate in Obstetrics
Emil Novak, M.D. ..... Associate in Obstetrics
J. G. M. Reese, M.D. ..... Instructor in Obstetrics
Dudley Pleasants Bowe, M.D. ..... Instructor in Obstetrics
J. G. Murray, Jr., A.B., M.D. ..... Instructor in Obstetrics
Maurice Lazenby, M.D. ..... Assistant in Obstetrics
J. J. Erwin, M.D. ..... Assistant in Obstetrics
M. Alexander Novey, A.B., M.D. ..... Assistant in Obstetrics
Isadore H. Siegel, M.D. ..... Assistant in Obstetrics
Thelma V. Owen, M.D. ..... Assistant in Obstetrics

Third Year. Three lectures and recitations each week by Drs. Dobbin, Bergland, Novak and Rowland to entire class. Manikin Work, Drs. Brack, Smith and Erwin to sections of class at Mercy Hospital, and Drs. Douglass, Reese, Bowe, Novey and Rowland at University Hospital.

Fourth Year. Clinical Conference. One hour each week. Drs. Rowland, Douglass, Murray and Lazenby.

Ward Classes. Six hours per week for five weeks to sections of class at University Hospital. Drs. Douglass, Reese, Bowe, Novey and Rowland at University Hospital.

DEPARTMENT OF GYNECOLOGY.

William S. Gardner, M.D. ..... Professor of Gynecology
J. Mason Hundley, M.D. ..... Professor of Clinical Gynecology
Hugh Brent, M.D. ..... Associate Professor of Gynecology
Abraham Samuels, M.D. ..... Associate Professor of Gynecology
Geo. A. Strauss, M.D. ..... Associate in Gynecology
R. G. Willse, M.D. ..... Associate in Gynecology
T. K. Galvin, M.D. ..... Assistant in Gynecology
J. M. Hundley, Jr., M.D. ..... Assistant in Gynecology
Leo Brady, M.D. ..... Assistant in Gynecology

Third Year. *Didactic Work.* A course of thirty lectures and recitations.

Clinical Work. Six hours weekly for one trimester. In this

course the student writes the clinical history of each patient in the ward, makes a general physical examination, including the blood and urine, before the patient is brought before the class. One student under supervision gives the anaesthetic, a pelvic examination is made by six students, and any operation required is then done before a section of the class small enough to see clearly what is being done and how it is done. On a subsequent day the whole group examine microscopically sections prepared from material removed from patients that have been before them.

DEPARTMENT OF OPHTHALMOLOGY AND OTOLOGY.

HARRY FRIEDENWALD, A.B., M.D.....Professor of Ophthalmology and Otology
J. W. DOWNEY, M.D.....Clinical Professor of Otology
M. RANDOLPH KAHN, M.D.....Associate Professor of Ophthalmology
H. K. FLECK, M.D.....Associate in Ophthalmology
JOSEPH I. KEMLER, M.D.....Associate in Ophthalmology

THIRD YEAR. *Course in Diseases of the Eye.* Sept. 28th to January 23rd. Dr. Harry Friedenwald.

Course in Diseases of the Ear, Sept. 28th to January 23rd. Dr. Downey.

Practical Course in Ophthalmoscopy, once weekly, in sections. Dr. Kemler.

FOURTH YEAR. *Clinics in Diseases of the Eye and Ear,* weekly. Drs. Harry Friedenwald and Downey.

Ward Studies of ocular and aural lesions associated with general medical diseases, once weekly in sections. Dr. Friedenwald.

Dispensary Instruction, daily to small sections. Drs. Kahn, Fleck, Downey and Kemler.

The courses in Ophthalmology and Otology are designed to familiarize the students with the common diseases of the eye and ear, their recognition and treatment, with a view to meet the needs of the general practitioner. Special emphasis is laid upon the relation between diseases of the eye and the ear and systemic diseases and diseases of other organs.

FIRST YEAR SCHEDULE—First Semester

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 9 to 10	HISTOLOGY AND EMBRYOLOGY LABORATORY P. & S. 32				Histology P. & S. 34	Dissecting A. H. and Laboratory
10 to 11					Embryology P. & S. 34	
11 to 12.00	Histology & Embryology Laboratory P. & S. 32	Histology P. & S. 34	Histology & Embryology Laboratory P. & S. 32	Histology and Embryology Laboratory P. & S. 32	Bacteriology P. & S. 34	
12 M. to 1 P. M.	Lunch and Transfer	Lunch and Transfer	Lunch and Transfer	Bacteriology P. & S. 34	Lunch and Transfer	
1 to 2	Anatomy A. H. & C. H.		Anatomy A. H. & C. H.	Lunch and Transfer		
2 to 4	Dissecting Laboratory	Dissecting A. H. and Laboratory	Dissecting Laboratory	Dissecting A. H. and Laboratory	Dissecting A. H. and Laboratory	
4 to 5						

Classes in Anatomy and Dissecting at Lombard and Greene Streets; all other classes at Calvert and Saratoga Strets.
A. H.—Anatomical Hall—N. E. Cor. Lombard and Greene Streets.
Anatomical Laboratory—Third Floor, Gray Laboratory—Lombard and Greene Streets.
P. & S.—N. W. Cor. Calvert and Saratoga Streets. Rooms indicated on Second Floor.

FIRST YEAR SCHEDULE—Second Semester

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 8.30 to 9.30	HISTOLOGY AND EMBRYOLOGY LABORATORY P. & S. 32				Histology P. & S. 34	Dissecting A. H. and Laboratory
9.30 to 10.30					Embryology P. & S. 34	
10.30 11.30	Physiology P. & S. 34	Embryology P. & S. 34	Physiology P. & S. 34	Bacteriology P. & S. 34	Physiology P. & S. 34	
11.30 to 12.00	LUNCH					
P. M. 12 to 2	BACTERIOLOGY LABORATORY P. & S. 32					
2 to 2.30	TRANSFER					
2.30 to *5.30	ANATOMY AND DISSECTING A. H. and Laboratory					

Classes in Anatomy and Dissecting at Lombard and Greene Streets; all other classes at Calvert and Saratoga Streets.
A. H.—Anatomical Hall—N. E. Cor. Lombard and Greene Streets.
Anatomical Laboratory—Third Floor, Gray Laboratory—Lombard and Greene Streets.
P. & S.—N. W. Cor. Calvert and Saratoga Streets. Rooms indicated on Second Floor.
* Neural Anatomy after April 10th.

SECOND YEAR—First Semester

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Satuday
A. M. 9 to 10	Physiology A. H.	Laboratory Physiology Section A Biological Chemistry Section B	Physiology A. H.	Laboratory Physiology Section B Biological Chemistry Section A	Pharmacology A. H.	Physiology L. B. 1
10 to 11	Biological Chemistry A. H.		Biological Chemistry A. H.		Biological Chemistry A. H.	Pharmacology A. H.
11 to 12.00	Pathology A. H.		Pharmacology A. H.		Pathology A. H.	Immunology A. H.
12.00 to 12.30	Lunch	LUNCH AND TRANSFER PERIOD				12-1 Pathology A. H.
P. M. 12.30 2.30	Laboratory Pharmacology Section A or B	Laboratory Immunology and Serology P. & S. 32		Medicine P. & S. 34	Immunology P. & S. 34	
2.30 3.30				Surgery P. & S. 34	Surgery P. & S. 34	1-1.30 Lunch
3.30 to 5.30	Surgical Anatomy P. & S. 33 and Laboratory	Surgical Anatomy P. & S. 33 and Laboratory	Surgical Anatomy P. & S 33 and Laboratory	Surgical Anatomy P. & S. 33 and Laboratory	Laboratory Pharmacology Section B or A	

Classes on Tuesdays, Wednesdays, Thursdays and Fridays from 12.30 to 5.30, at Calvert and Saratoga Streets; all other classes at Lombard and Greene Streets.
A. H.—Anatomical Hall—N. E. Cor. Lombard and Greene Streets.
L. B. 1—Law Building—First Floor, Lombard and Greene Streets.
P. & S.—N. W. Cor. Calvert and Saratoga Streets. Rooms indicated on Second Floor.

SECOND YEAR SCHEDULE—Second Semester

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 8.30 to 9.30	Physiology A. H.	Laboratory Physiology Section A Biological Chemistry Section B	Physiology A. H.	Laboratory Physiology Section B Biological Chemistry Section A	Pharmacology A. H.	Physiology L. B. 1
9.30 to 10.30	Biological Chemistry A. H.		Biological Chemistry A. H.		Biological Chemistry A. H.	Pharmacology A. H.
10.30 to 11.30	Pathology A. H.		Pharmacology A. H.		Pathology A. H.	11 to 12 Pathology A. H.
11.30 to 12.00	LUNCH					Medical Clinic Amp.
P. M. 12 to 2	PATHOLOGY		LABORATORY			
2 to 3	Laboratory Pharmacology Section A	Laboratory Pharmacology Section A	Physical Diagnosis Univ. Hosp. Disp.	Laboratory Pharmacology Section B	Laboratory Pharmacology Section B	
3 to 4	Biological Chemistry Section B	Physiology Section B		Physiology Section A	Biological Chemistry Section A	
4 to 5						

All classes at Lombard and Green Streets.
A. H.—Anatomical Hall—N. E. Cor. Lombard and Greene Streets.
L. B.—Law Building—First Floor, Lombard and Greene Streets.
Amp.—Amphitheatre—University Hospital, S. W. Cor. Lombard and Greene Streets.

THIRD YEAR SCHEDULE

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 8.30 to 9.30	Therapeutics C. H.	Pathology C. H.	Medicine C. H.	Surgery C. H.	Pathology C. H.	Surgery C. H.
9.30 to 10.30	Obstetrics C. H.	Surgery C. H.	Obstetrics C. H.	Medicine C. H.	Medicine C. H.	Therapeutics C. H.
10.30 to 1	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch
1 to 2	Medical Clinic Amp.	Surgery C. H.	Neurology P. & S. 33	Obstetrics P. & S. 33	Gynecology P. & S. 33	Transfer
2.15 to 4.15	Pathology Laboratory	Pathology Laboratory	2.30-4.30 Section A Clinical Medicine Surgery Gross Pathology at Bay View	Clinical Pathology Laboratory P. & S. 34, 32	Clinical Pathology Laboratory P. & S. 34, 32	2-4 Section B Clinical Medicine Surgery Gross Pathology at Bay View
4.15 to 5.15	Pediatrics A. H.	Eye and Ear C. H.	2.15-4.15 Section B Group Work Ophthalmoscopy Practical Obstetrics Univ. Hosp.	Preventive Medicine Legal Medicine Mental Hygiene P. & S. 34	Preventive Medicine P. & S. 34	

From 10.30 A. M. to 1.00 P. M. the class is divided into two sections, one section reporting at Calvert and Saratoga Streets, the other at Lombard and Greene Streets.

C. H.—Chemical Hall—N. E. Cor. Lombard and Greene Streets.

A. H.—Anatomical Hall—N. E. Cor. Lombard and Greene Streets.

Amp.—Amphitheatre—University Hospital, S. W. Cor. Lombard and Greene Streets.

P. & S.—N. W. Cor. Calvert and Saratoga Streets. Rooms indicated on Second Floor.

At the beginning of the second semester Section "A" at Bay View on Saturdays, 2-4 P. M., and University Hospital on Wednesdays, 2.15-4.15 P. M.; Section "B" at Bay View on Wednesdays, 2.30-4.30 P. M.

FOURTH YEAR SCHEDULE

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 8.30 to 11.00	Ward Classes Medicine Surgery Obstetrics	Ward Classes Medicine Surgery Gynecology	Ward Classes Medicine Surgery Obstetrics	Ward Classes Medicine Surgery Gynecology	Ward Classes Medicine Surgery Obstetrics	Ward Classes Medicine Surgery Gynecology
11.00 to 12.00	Orthopaedic Surgery **Univ.Sec.Amp.** **P. & S. Sec. 51**	Medical Clinic **Univ.Sec.Amp.** Surgical Pathology **P. & S. Sec. 40**	Clinical Pathological Conference **Univ. Sec. C.H.** **P. & S. Sec. 33**	Surgical Clinic **Univ.Sec.Amp.** **P. & S. Sec. 51**	Medical Clinic **Univ.Sec.Amp.** **P. & S. Sec. 33**	Pediatrics Clinic **Univ.Sec.Amp.** **P. & S. Sec. 33**
P. M. 12 to 2	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary
2.15 to 3.15	Dermatology Clinic (Full Class at Univ. Hosp.) **Amp.**	Neurology Clinic **Univ.Sec.Amp.** **P. & S. Sec. 33**	Eye and Ear Clinic (Full Class at Univ. Hosp.) **Amp.**	Genito-Urinary Clinic **P. & S. Sec. 51** Obstetrical Clinic Univ. Hosp. **Amp.**	Gastro-Enterology Clinic (Full Class at Univ. Hosp.) **Amp.**	
3.30 to 5.00	Ward Classes Medicine **Urology** Eye and Ear	Ward Classes Therapeutics Proctology Radiotheraphy	Ward Classes Medicine Roentgenology Preventive Medicine	Ward Classes Medicine Orthopaedic Surgery Physical Therapeutics	Ward Classes Neurology Nose & Throat Psychiatry	

The Senior Class is divided into two sections, which report, one at Lombard and Greene Streets, the other at Calvert and Saratoga Streets, for one semester each, then rotate.

Each section of the class is divided into three groups—Medical, Surgical, and Special. These groups will rotate on the following dates:

FIRST SEMESTER	SECOND SEMESTER.
1st period, Sept. 28th to Oct. 31st.	1st period, Jan. 25th to Feb. 27th.
2nd period, Nov. 2nd to Dec. 5th.	2nd period, Mch. 1st to Apr. 10th.
3rd period, Dec. 7th to Jan. 23rd.	3rd period, Apr. 12th to May 15th.

C. H.—Chemical Hall—N. E. Cor. Lombard and Greene Streets.
Amp.—Amphitheatre—University Hospital.
P. & S., 33, 34—Second Floor, Calvert and Saratoga Streets.
P. & S., 40, 51—Fourth Floor, Calvert and Saratoga Streets.

REQUIREMENTS FOR MATRICULATION.

Admission to the course in medicine is by a completed Medical Student Certificate issued by the Registrar of the University of Maryland. This certificate is obtained from the Registrar on the basis of satisfactory educational credentials, and is essential for admission to any class.

The requirements for the issuance of the Medical Student Certificate are:

(a) The completion of a standard four-year high school course or the equivalent, and in addition, at least

(b) Two years or sixty semester hours of college credits, including chemistry, biology, physics and English.

Women are admitted to the School of Medicine of this University.

(A) HIGH SCHOOL REQUIREMENTS.

Graduation from an accredited high or preparatory school after pursuing a four-year course based upon an eight-year elementary course or its full equivalent as demonstrated by entrance examinations.

At least fifteen units must be offered.‡

SCHEDULE OF SUBJECTS REQUIRED OR ACCEPTED FOR ENTRANCE TO THE PRE-MEDICAL COLLEGE COURSE

Subjects	Units*	Required
GROUP I, ENGLISH—		
Literature and Composition	3–4	3
GROUP II, FOREIGN LANGUAGES—		
Latin	1–4	
Greek	1–3	2†
French or German	1–4	
Other foreign languages	1–4	

GROUP III, MATHEMATICS—		
Elementary algebra	1	1
Advanced algebra	½–1	.....
Plane geometry	1	1
Solid geometry	½	.....
Trigonometry	½	.....
GROUP IV, HISTORY—		
Ancient history	1	
Medieval and modern history	1	
English history	1	1
American history	½–1	
Civil government	½–1	
GROUP V, SCIENCE—		
Botany	½–1	
Zoology	½–1	
Chemistry	1	
Physics	1	1
Physiography	½–1	
Physiology	½–1	
Astronomy	½	
Geology	½–1	
GROUP VI, MISCELLANEOUS—		
Agriculture	1–2	.....
Bookkeeping	½–1	.....
Business law	½	.....
Commercial geography	½–1	.....
Domestic science	1–2	.....
Drawing, freehand and mechanical	½–2	.....
Economics and economic history	½–1	.....
Manual training	1–2	.....
Music: Appreciation or harmony	1–2	.....

*A unit is the credit value of at least thirty-six weeks' work of four or five recitation periods per week, each recitation period to be not less than forty minutes. In other words a unit represents a year's study in any subject in a secondary school constituting approximately a quarter of a full year's work. A satisfactory year's work in any subject cannot be accomplished under ordinary circumstances in less than 120 sixty-minute hours, or their equivalent.

†Both of the required units of foreign language must be of the same language, but the two units may be presented in any one of the languages specified.

‡Of the fifteen units of high school work, nine units are required, as indicated in the foregoing schedule; the remainder may be made up from any of the other subjects in the schedule, provided that at least eleven units must be offered in Groups 1-V.

(B) DETAILS OF THE COLLEGE REQUIREMENT.

a. The preliminary college course shall extend through two college sessions of at least thirty-two weeks each of actual instruction, including final examinations.

b. In excellence of teaching and in content, the work of this preliminary college course shall be equal to the work done in the freshman and sophomore years in standard colleges and universities.

c. This preliminary college course shall include courses in physics, chemistry, biology, and English, each course to embrace at least six, eight or twelve hours of work in each subject, as shown in the schedule following.

SCHEDULE OF SUBJECTS OF THE TWO-YEAR PRE-MEDICAL COLLEGE COURSE.

Sixty Semester Hours Required

REQUIRED COURSES:	*Semester Hours*
Chemistry (a)	12
Physics (b)	8
Biology (c)	8
English Composition and Literature (d)	6

COURSES STRONGLY URGED:

A modern foreign language.
Comparative vertebrate anatomy.
Psychology.
Social science.

A semester hour is the credit value of sixteen weeks' work consisting of one lecture or recitation period per week, each period to be of not less than fifty minutes' duration net, at least two hours of laboratory work to be considered as the equivalent of one lecture or recitation period.

(a) CHEMISTRY. Twelve semester hours required, of which at least eight semester hours must be in general inorganic chemistry, including four semester hours of laboratory work. In the interpretation of this rule, work in qualitative analysis may be counted as general inorganic chemistry. The remaining four semester hours required shall consist of work in organic chemistry.

(b) PHYSICS. Eight semester hours required, of which at least two must be laboratory work. This course presupposes a knowledge of plane trigonometry.

(c) BIOLOGY. Eight semester hours required, of which four must be laboratory work. This requirement may be satisfied by a course of eight semester hours in either general biology or zoology, or by courses of four semester hours each in zoology and botany, but not by botany alone.

(d) ENGLISH COMPOSITION AND LITERATURE. The usual introductory college course of six semester hours, or its equivalent, is required.

COMBINED COURSE IN ARTS AND MEDICINE.

A combined seven years' curriculum is offered, leading to the degrees of Bachelor of Science and Doctor of Medicine. The first three years are taken in residence at College Park, and the last four years in Baltimore, at the School of Medicine. The premedical curriculum constitutes the first two years' work and the third year follows a general outline of prescribed and elective courses approved by the chairman of the premedical committee and the dean of the College of Arts and Sciences.

Upon the successful completion of the first year in the School of Medicine, and upon the recommendation of the dean, the degree of Bachelor of Science may be conferred by the College of Arts and Sciences at College Park.

Students are urged to consider carefully the advantages this combination course offers over the minimum requirements of the two years. By completing three years the training may be gradually broadened by a wider latitude in the election of courses in the arts subjects.

POST-GRADUATE STUDENTS.

Graduates in medicine desiring to take the work of the senior year without being candidates for the degree and, therefore, without examination, may receive a certificate of attendance on completing the full course satisfactorily.

The requirements for graduates in medicine admitted to the fourth year class as candidates for the degree of Doctor of Medicine are the same as those enforced against undergraduates admitted to advanced standing.

Summer Post-Graduate Courses—In the April number of the Bulletin detailed announcement will be made of the Post-graduate Summer Courses.

RULES.

1. All students are required to take the spring examinations unless excused by the Dean. No student will be permitted to advance from a lower to a higher class with conditions.

2. Should a student be required to repeat any year in the course he must pay regular fees.

3. A student failing in final examinations for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and to take examinations in such other branches as may be required, should he be again permitted to enter the school as a candidate for graduation.

4. The general fitness of a candidate for graduation will be taken into consideration by the Faculty as well as the results of his examination.

5. All first, second and third year students entering the School of Medicine of the University of Maryland are required to provide themselves with microscopes of a satisfactory type.

A standard microscope of either Bausch & Lomb, Leitz, Spencer Lens or Zeiss make, fitted with the following attachments, will fill the requirements:

Triple nose piece.	10 x and 5 x Oculars.
Wide aperture stage.	16mm. and 4mm. Objectives.
Quick screw condenser (Abbe).	1.9mm. 1.25 N.A. Oil Immersion Lens.

All the above rules, as well as the fees stated below, relate to the year ending June 5, 1926, only. The right is reserved to make changes in the curriculum, the requirements for graduation, the fees and in any of the regulations whenever the Faculty deem it expedient.

FEES.

Matriculation fee (paid once)	$10.00
Tuition fee (each year) for residents of Maryland	250.00
Tuition fee (each year) for non-residents	300.00
Laboratory fee (each year)	10.00
Special and re-examination fee	5.00
Graduation fee	10.00

No fees are returnable.

The above fees apply to all students who matriculate in this institution in any class for the session beginning September 28, 1925.

All students, after proper certification, are required to register at the Registrar's office. The last date of registration is October 5, 1925.

Matriculation, laboratory and tuition fees for the first semester shall be paid at the time of registration, and for the second semester on or before February 6th, 1926.

Failure to meet these conditions will automatically debar the student from attendance on classes and other privileges of the University.

Students who fail to pay the tuition and other fees, on or before the last day of registration, for each term or semester, as stated in the catalogue, will be required to pay as an addition to the fees required the sum of Five ($5.00) Dollars and if the payment so required shall not be paid before twenty (20) days from the beginning of said term or semester, the students name shall be stricken from the rolls.

Students who are minors are considered to be resident students, if at the time of their registration, their parents or guardians have been residents of this state for at least one year.

Adult students are considered to be resident students, if at the time of their first registration they have been residents of this state for at least one year.

The status of the residence of a student is determined at the time of his first registration in the University and may not thereafter be changed by him unless his parents or guardians move to and become legal residents of this State.

PRIZES AND SCHOLARSHIPS

FACULTY PRIZE.

To stimulate study among the candidates for graduation, the Faculty offers a Gold Medal to the candidate who secures the highest average during the four years of his course. Certificates of Honor are awarded to the five candidates standing next highest.

DR. JOSE L. HIRSH MEMORIAL PRIZE.

A prize of $50.00 is given each year by Mrs. David Myers as a memorial to the late Dr. Jose L. Hirsh, formerly Professor of Pathology in this School, to the student in the third year who has done the most satisfactory work in Pathology during his second and third years.

SCHOLARSHIPS.

The Dr. Samuel Leon Frank Scholarship.
(Value, $125.00)

This scholarship was established by Mrs. Bertha Rayner Frank as a memorial to the late Dr. Samuel Leon Frank, an alumnus of this University.

It is awarded by the Trustees of the Endowment Fund of the University each year upon nomination by the Medical Council, "to a medical student of the University of Maryland, who, in the judgment of said Faculty, is of good character and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student, who has successfully completed one year's work in this school, and no student may hold such scholarship for more than two years.

The Charles M. Hitchcock Scholarships.

(Value, $125.00 each)

Two scholarships were established from a bequest to the School of Medicine by the late Charles M. Hitchcock, M. D., an alumnus of the University.

These scholarships are awarded annually by the Trustees of the Endowment Fund of the University upon nomination by the Medical Council to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Faculty satisfactory evidence of a good moral character and of inability to continue the course without pecuniary assistance.

The Randolph Winslow Scholarship.

(Value, $125.00)

This scholarship was established by Prof. Randolph Winslow, M.D., LL.D.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Medical Council, to "a needy student of the Senior, Junior, or Sophomore Class of the Medical School."

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship."

"He must be a person of good character and must satisfy the Medical Council that he is worthy of and in need of assistance."

The Dr. Leo Karlinsky Scholarship.

(Value, $200.00)

This scholarship was established by Mrs. Ray Mintz Karlinsky as a memorial to her husband, the late Dr. Leo Karlinsky, an alumnus of the University.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Medical Council, to "a needy student of the Senior, Junior or Sophomore Class of the Medical School."

"He must have maintained an average grade of 85 per cent. in all his work up to the time of awarding the scholarship."

"He must be a person of good character and must satisfy the Medical council that he is worthy of and in need of assistance."

The University Scholarships.

Two Scholarships are awarded by the University. One to a student of the Department of Liberal Arts appointed by the President to be held for only one year; the other, which entitles the holder to exemption from payment of the tuition fee of the year, is awarded annually by the Medical Council to a student of the Senior Class who presents to the Medical Council satisfactory evidence that he is of good moral character and is worthy of and in need of assistance to complete the course.

Frederica Gehrmann Scholarship.

This scholarship was established by the bequest of the late Mrs. Frederica Gehrmann and entitles the holder to exemption from payment of tuition fees. The scholarship is awarded to a third year student who at the end of the second year passes the best practical examination in Anatomy, Physiology, Biological Chemistry, Pharmacology, Pathology, Immunology and Serology.

The Clarence and Genevra Warfield Scholarships.

(Valuation $300.00 each)

There are five scholarships established by the Regents from the income of the fund bequeathed by the will of Dr. Clarence Warfield.

Terms and Conditions: These scholarships will be available to students of any of the classes of the course in medicine. Preference is given to students from the counties of the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners.

Any student receiving one of these scholarships must, after graduation and a year's interneship, agree to undertake the

practice of medicine, for a term of two years, in the county to which the student is accredited or in a county selected by the Council. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Council, the money advanced by the Regents shall be refunded. A bond in the amount of $1,200, the expense of which is borne by the Fund, must be filed by the student accepting one of these scholarships for faithful performance of the conditions imposed.

Israel and Cecilia E. Cohen Scholarship.

(Value $250.00)

This scholarship was established by Miss Eleanor S. Cohen in memory of her parents, Israel & Cecilia E. Cohen. Terms and conditions:

This scholarship will be available to students of any of the classes of the course in Medicine; preference is given to students of the counties of the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners. Any student receiving one of these scholarships must, after graduation and a year's internship, agree to undertake the practice of medicine for a term of two years in the county to which the student is accredited, or in a county selected by the Council.

ANNUAL HOSPITAL APPOINTMENTS.

On February first of each session the following annual appointments are made from among the graduates of the school:

TO THE UNIVERSITY HOSPITAL

Two Resident Surgeons.
Two Resident Physicians.
One Resident Gynecologist.
One Resident Obstetrician
Thirteen Junior Residents on a Rotating Service.

A number of students are appointed each year, at the close of the session, as Clinical Assistants in the University Hospital for the summer months.

TO THE MERCY HOSPITAL

Chief Resident Physician.	One Resident Gynecologist.
Three Resident Surgeons.	One Resident Obstetrician.
One Resident Physician.	Eight Junior Residents on a Rotating Service

NOTICE TO STUDENTS.

The personal expenses of the students are at least as low in Baltimore as in any large city in the United States. The following estimates of a student's personal expenses for the academic year of eight months have been prepared by students, and are based upon actual experience.

Items.	*Low*	*Average*	*Liberal*
Books	$27	48	75
College Incidentals	20	20	20
Board, eight months	200	250	275
Room rent	64	80	100
Clothing and laundry	50	80	150
All other expenses	25	50	75
Total	$386	$529	$695

Students will save time and expense upon their arrival in the city by going direct to the School of Medicine on the University grounds, N. E. corner of Lombard and Greene Streets, where the Superintendent of Buildings, who may be found at his office on the premises, will furnish them with a list of comfortable and convenient boarding houses suitable to their means and wishes.

The Dean will, if desired, attend to the collection of checks and drafts for students.

For further information, apply to

J. M. H. ROWLAND, M. D., *Dean,*

Lombard and Greene Streets.

MATRICULATES, UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, 1924-25.

Fourth Year Class.

Balcerzak, Stanley Paul.....Pennsylvania
Briglia, Nicholas Natale.....Pennsylvania
Brown, Leo T.....District of Columbia
Byerly, Marshall Paul.....North Carolina
Cadle, William Rodman.....Maryland
Cardinale, Pasquale F.....New Jersey
Caso, Jose.....Porto Rico
Clahr, Abraham Albert.....New York
Coe, John Marburg.....Maryland
Coonan, Thomas Joseph, A.B.....Maryland
Cope, Arthur Alexander, A.B...Pennsylvania
Dodd, Benjamin Roscoe, A.B., North Carolina
Dodge, Eva Francette, A.B...North Carolina
Draper, Leonidas McFerrin, A.B.
North Carolina
Dreskin, Jacob Louis.....New Jersey
Eastland, John Sheldon, A.B.....New York
Elgin, Lee William.....Maryland
Ellis, Francis A., A.B.....Maryland
Epstein, Harry Herman.....New York
Everett, Franklin Redman.....Maryland
Fancher, Henry Wilson, Jr., B.S.,
Connecticut
Farber, Raphael .....Pennsylvania
Fields, Abijah Clements.....Alabama
Fischman, Harold H.....New Jersey
Friedman, Bernard.....New York
Fuchs, Abner M.....New York
Gale, Louis Harry.....Pennsylvania
Gaston, William Bryan.....West Virginia
Gattens, Wilbur Elton, B.S.....Maryland
Glick, Samuel, A.B.....Maryland
Gurley, Hubert Taylor.....North Carolina
Hall, Cecil Maurice, B.S.....West Virginia
Hammond, Kent Cato, B.S.....West Virginia
Herbert, Alpha Nathan.....New Jersey
Hertz, Ben.....New York
Hofler, Ralph Hayes.....North Carolina
Howell, James Gerald, B.S.....Pennsylvania
Hulla, Jaroslav.....Maryland
Jacobs, Morris Albert.....Maryland
Keating, John Patrick.....Connecticut
Kimbrough, Joseph William, Jr.,
North Carolina
Knotts, William Kenneth.....Maryland
Laus, Edward Raymond.....New York
Leibensperger, George Franklin,
Pennsylvania
Lennon, William Earle.....North Carolina
Linde, Samuel Arthur.....Maryland
London, Daniel.....New York
Lowe, Claude Milton.....Pennsylvania
McAnally, Alfred Loomis.....North Carolina
Miller, Edgar Raymond, A.B...Pennsylvania
Minnefor, Charles A.....New Jersey
Montani, Anthony Carmen, B.S.....Ohio
Nataro, Joseph.....New Jersey
Navarro, Vicente Aguirre, A.B.,
Philippine Islands
Nelson, James Wharton, A.B.....Maryland
Nock, Randolph Maxwell.....Maryland
Oshrin, Henry.....New Jersey
Pinsky, Myer Mordecai.....New Jersey
Plassnig, Edwin, B.S.....Maryland
Polizotti, Joseph Louis.....New Jersey
Pulaski, Leo Edward.....Pennsylvania
Rathsprecher, Isadore.....New Jersey
Reynolds, Knight, B.S.....West Virginia
Richmond, Lewis Cass, Jr., A.B.....Kentucky
Roberts, Bryan Nazer, A.B...North Carolina
Sarnoff, Jack.....New York
Silverstein, Jacob Maurice.....New Jersey
Simon, Joseph Ralph.....Pennsylvania
Simpson, Henry Hardy, A.B...North Carolina
Sinton, William Allen.....Virginia
Spelsburg, Walter William, B.S.,
West Virginia
Sulman, William Richard.....Pennsylvania
Tomaiuoli, Michael Francis.....New Jersey
Turner, Thomas Bourne, B.S.....Maryland
Vila-Morales, Jaime.....Porto Rica
Visconti, Joseph Albert.....New Jersey
Ward, William Titus, A.B.....North Carolina
Wassersweig, Martin Max.....Pennsylvania
Widmeyer, Robert Samuel, B.S.,
West Virginia
Wiener, Joseph.....New York
Wilson, Paul Russell, B.S.,....West Virginia
Winstead, John Lindsay.....North Carolina
Zimmerman, Charles C.....Maryland

Third Year Class.

Alford, Ralph Judson, B.A....North Carolina
Anker, Harry.....Ohio
Askin, Aaron John, A.B.....Maryland
Ballard, Margaret Byrnside....West Virginia
Beachley, Jack Henson.....Maryland
Berry, Robert Alford.....Georgia
Blough, Homer Chester, B.S.....Pennsylvania
Bronstein, Irving.....New York
Calvin, Warren Ellwood, B.S.....Maryland
D'Angelo, Antonio Francesco....Rhode Island
DeVincentis, Henry.....New Jersey
Diamond, H. Elias, B.S.....New York
DiPaula, Frank Rosario, A.B.....Maryland
Dyer, Newman Houghton, B.S.,
West Virginia
Eanet, Paul.....District of Columbia
Edmonds, Charles William.....Maryland
Elliott, Julian Carr, A.B.....Virginia
England, Welch, B.S.....West Virginia
Fine, Morris Aaron.....Maryland
Finkelstein, Abraham Harry.....New York
Freedman, Herman.....New Jersey
Freedman, Max.....New Jersey
Freuder, Arthur Nathan.....New York
Geraghty, Francis Joseph, A.B.....Maryland
Gerber, Isadore Earle, A.B.....Maryland
Gordon, Abel, B.A.....New Jersey
Gorham, Herbert Jenkins.....North Carolina
Graham, John Wirt, B.A.....Maryland
Helfond, David Mathew, B.S.....New York
Hendrix, Nevins Byford, A.M.....Maryland
Hibbitts, John Thomas.....Maryland
Hyman, Colvin, A.B.....Maryland
Jensen, Jacob Roed, B.S.....Denmark
Johnson, Phil, B.S.....West Virginia
Jolson, Meyer Stanley, A.B.....Maryland
Knapp, Alphonse, Joseph, A.B.....Maryland
Krosnoff, John Alexander, B.S.,
Pennsylvania
Lavy, Louis Theodore.....Maryland
Leake, Everette Majjette.....North Carolina
Levin, H. Edmund, B.S.....Maryland
Levin, Isadore Leonard, A.B.....Ohio
Levin, Joseph.....New Jersey
Loftin, William Frank English, A.B.,
North Carolina
Lumpkin, Lloyd Uber, B.S.....Maryland
Lusby, Frank Farrier, A.B.....Maryland
Manginelli, Emanuel .....New York
Merkel, Walter Clarence, A.B...Pennsylvania
Miller, Harry G.....New York
Misenheimer, Ed Alexander..North Carolina
Moriconi, Albert Francis.....New Jersey
Polsue, William Clewell.....West Virginia
Rattenni, Arthur.....Rhode Island
Rocco, Frank.....New Jersey
Rosenberg, Albert Abraham....Pennsylvania
Rosenfeld, Max Harry, A.B.....Maryland
Rothberg, Abraham S., B.S.....New York
Sashin, David.....New York
Sax, Benjamin J.....New York
Schenker, Paul.....Maryland
Schmuckler, Jacob.....New Jersey
Schneider, David, A.B.....Maryland
Schuman, William, A.B.....Maryland
Schwartz, Ralph Alfred.....New Jersey
Scullion, Arthur Anthony, B.S...New Jersey
Sherman, Elizabeth Bowman, A.B...Virginia
Spano, Frank.....New Jersey
Tayloe, Gordon Bennett, B.A.,
North Carolina
Tayntor, Lawis Olds, Pc.C.....Pennsylvania
Teagarden, Ersie Van, B.S.....West Virginia
Teitelbaum, Maurice L.....New York
Tobias, Herbert Ramsay.....Maryland
Totterdale, William Grainger, A.B.,
Maryland
Trubek, Max, A.B.....New Jersey
Weinstein, Samuel.....New Jersey
Weiss, Louis Leo.....New York
Weseley, Louis Jerome.....New York
Whicker, Guy Lorraine, B.A.,
North Carolina
Wolfe, Samuel Benjamin.....Maryland

Second Year Class, 1924-1925.

Adzima, Joseph Matthew.....Connecticut
Aptaker, Albert Jack.....New York
Armacost, Joshua Harper.....Maryland
Bankhead, John Marion, B.S., South Carolina
Barnett, Edwin Dwight, A.B.....California
Basil, George Chester, Ph. G.....Maryland
Belsky, Hyman.....New Jersey
Benesunes, Joseph George, A.B.....Maryland
Bialostosky, Julius, B.S.....New York
Birnbaum, Joseph Osias.....New York
Bloch, Adolph.....New Jersey
Cadden, John Francis, Jr.....West Virginia
Carey, Thomas Nelson.....Maryland
Castronovo, Joseph.....Rhode Island
Chase, William Wiley, A.B.....Maryland
Clemson, Earle Princeton.....Maryland
Cohen, Bernard J., Ph.G.....Maryland
Cohen, Morris Daniel.....New York
Davis, Henry Vincent.....Maryland
Donchi, Sol Marvin, B.S.....New Jersey
Eliason, Harold William.....West Virginia
Feldman, Jacob.....New York
Friedman, Meyer Henry.....New Jersey
Gellar, Abraham, B.S.....New York
Gill, Charles Edward.....Delaware
Gillis, Francis Winfred.....Maryland
Ginsberg, Henry.....Maryland
Glass, Louis Joseph, Ph. G.....Maryland
Glick, Bernard.....New Jersey
Goldberg, Isidore.....New Jersey
Golstein, Milton Joseph.....New York
*Grossfeld, Michael Joseph.....Maryland
Heisley, Rowland S.....Maryland
Hewitt, John Frank, A.B.....Maryland
Hummel, Ira Lee Cottrell.....New Jersey
Jones, Ora Reed.....Ohio
Kahan, Philip J.....New York
Karns, Clyde Filmore, B.S.....Maryland
Kaufman, Israel, B.S.....New York
Klawans, Maurice Francis.....Maryland
Kutner, Charles.....New Jersey
Lassman, Samuel, B.S.....New York
Lazow, Sol M.....New York
Lenson, Byruth King (Mrs.).....Maryland
Leyko, Julius Joseph, A.B.....Maryland
Lilly, Goff Platt.....West Virginia
*Matassa, Vincent Louis.....Maryland
Mattikow, Bernard, B.S.....New York
*Michel, George Charles.....Maryland
Moran, John Edward, Ph.G..New Hampshire
Morris, Frank Kailer, A.B.....Maryland
Nussbaum, Samuel.....New York
Peake, Clarence William.....Kentucky
Phillips, John Roberts, A.B.....Maryland
Reifschneider, Herbert E., A.B.....Maryland
Rich, Benjamin Sunderland, A.B...Maryland
Roetling, Carl Paul.....Maryland
Ruiz, Emilio M., B.S.....Porto Rico
Saffell, James Glen.....Maryland
Schnierer, Samuel Benjamin....Connecticut
Schwedel, John Bernard.....Maryland
Slagle, Alexander Russell, A.B.....Maryland
Smith, Paul L.....Pennsylvania
Sobkov, Samuel .....Maryland
Sparta, Anthony.....Pennsylvania
Stacy, Theodore Edwin, Jr., Ph.G., Pennsylvania
Stonesifer, Charles Hiram, A.B...Maryland
Susser, Max Herman.....New Jersey
Swank, James Levy, B.S.....Pennsylvania
Swartzwelder, Wallace Ray.....Pennsylvania
Teague, Francis Bailey.....Virginia
Tenaglia, Entimio Domenico....Rhode Island
Thompson, Thomas Payne, A.B.....Maryland
Tollin, Louis.....New Jersey
Tumminnello, Salvatore Anthony..Maryland
Upton, Hiram Eugene, B.S.....Vermont
Voigt, Herman Albert, Ph.G.....Maryland
Von Schulz, Augustine Paul.....Maryland
Wack, Frederic Van Deursen, B.S., New Jersey
Waesche, Frederick Seton, A.B.....Maryland
Whittington, Claude Thomas..North Carolina
Williams, Palmer Francis Castiglione, B. S. .....Maryland
Wilner, Joseph Walter.....New York
Wohlreich, Joseph Jacob.....New Jersey
Wollak, Theodore.....Maryland

* Did not complete year.

First Year Class, 1924-1925.

Aiau, Chadwick Kanekoa.....T. H.
Albaugh, Guy Clinton.....Pennsylvania
Baer, Adolph.....New York
Bedri Marcel Rechtman.....Palestine
Benson, Alvan Homer.....Maryland
Berger, William Adolph, B.S.....New Jersey
Bernhard, Robert.....New York
Blecherman, Irving Ezra.....New York
Bonelli, Nicholas William.....New Jersey
Brager, Simon.....Maryland
*Brocato, Charles Vincent.....Maryland
Brown, Nellie Madeleine.....Pennsylvania
Chor, Herman, A.B.....Maryland
Christian, William.....Pennsylvania
Dailey, Cornelius Michael.....Pennsylvania
DeBarbieri, Fred Louis, A.B...Pennsylvania
Duckwall, Frederick Mooman..West Virginia
*Engelke, Edmund Harrison, B.S...Maryland
Fedder, Eli, Ph.G.....Maryland
Fifer, Jesse Showalter, A.B.....Delaware
Friedman, Bernard.....New York
Gaffney, Charles Bernard.....Connecticut
Gaskins, Theodore Grady.....North Carolina
Gelber, Jacob Saul.....New York
Giocolano, Ralph Gabriel.....New York
Goldberg, Victor, Ph.G.....Maryland
Goodman, Jerome Edward, Ph.G...Maryland
Greenberg, Harry, Ph.G.....Maryland
Grollman, Aaron Isaac, B.S.....Maryland
Guiglia, Sascha Facchetti.....New York
Gülck, George Krohn, B.S.....Denmark
Gundry, Lewis Perkins, A.B.....Maryland
Hankin, Samuel Jacob.....Maryland
Hayden, Benjamin Stephen, Jr.....Maryland
Herold, Lewis Jacob, Ph.G.....New York
Johnson, Walter Brenaman, A.B...Maryland
Jones, Henry Alvan, Ph.G.....Maryland
Kaminsky, Philip.....New York
*Kemp, Alexander Brown.....Maryland
Kohn, Theodore.....South Carolina
*Krolicki, Thaddeus Alphonsus..Connecticut
Lampert, Hyman.....New York
Lamstein, Jacob Irving, B.S.....New York
Laukaitis, Joseph George.....Maryland
*Lazarus, Max.....New Jersey
Lerner, Morris.....New York
Levinsky, Maurice.....Connecticut
Levinson, Louis Jack.....New York
Levy, Walter Howard.....New York
Limbach, Earl Frederick, A.B.....Ohio
Little, Luther Emmanuel, Ph.G.....Maryland
Littman, Irving I.....Maryland
Lyon, Isadore Bernard, A.B.....Maryland
Mace, John, Jr., B.S.....Maryland
Maddi, Vincent Michael, A.B.....New York
Maged, Abraham John, A.B.....New York
Matsumura, Junichi.....T. H.
McCeney, Robert Sadler, A.B.....Maryland
McFaul, William Neal, Jr., A.B...Maryland
McGowan, Joseph Francis.....Pennsylvania
McKee, Albert Vincent.....Pennsylvania
Meister, Aaron.....New York
Merksamer, David, A.B.....New York
Merlino, Frank Anthony.....New Jersey
Messina, Vincent Michael.....Maryland
*Moore, Charles Mortimore.....Virginia
Mostwill, Ralph.....New Jersey
*Nagle, Carl Rotan.....Maryland
Neuman, Finley Frederick, A.B.....Ohio
*Pass, Victor Earl, Ph. G.....Maryland
Pegues, William Leak, A.B...South Carolina
Piacentine, Pasquale Anthony.....New York
Pileggi, Peter.....New Jersey
Postrel, Lewis Louis.....New York
Rascoff, Henry.....New York
Repasky, John.....Ohio
Rosen, Marks Julius.....New York
*Ross, Arthur Isaac.....New York
Rubenstein, Hyman Solomon, Ph.G., Maryland
Rutter, Joseph Howard.....Florida
Saffron, Morris Harold, A.B.....New Jersey
Sardo, Samuel Philip.....Pennsylvania
Silver, Abraham Alfred.....Connecticut
Singer, Jack Jerome.....Maryland
Smith, Lazarus.....New York
Smoot, Aubrey Cannon, A.B.....Maryland
Smoot, Merril Clayville, B.S.....Maryland
Stone, Jesse Edwin, A.B.....Maryland
Tannenbaum, Morris, B.S.....New York
Taylor, Charles Vivian, A.B.....Maryland
Tenner, David, Ph.G.....Maryland
Tkach, Nathan Hersh.....New York
Varney, William Henry.....Maryland
Vernaglia, Anthony Paul Joseph..New York
Vogel, S. Zachary.....New York
Volenick, Leon Joseph.....New York
Walter, Frank Pierce.....Maryland
Ward, Hugh Walter, A.B.....Maryland
Warner, Carroll Gardner, A.B.....Maryland
Weintraub, Fred Siegfried, B.S., Pennsylvania
Weisenfeld, Nathan, B.S.....Connecticut
Weiss, Aaron.....New York
*White, Beulah May (Miss).....Maryland
Wilkerson, Albert Russell, Ph.G...Maryland
Wolf, Frederick Samuel.....Maryland
Woolley, Alice Stone (Miss), B.S...Maryland
Wurzel, Milton.....New Jersey
Zimmerman, Frederick Thomas, A.B., Pennsylvania

* Did not complete year.

GENERAL SUMMARY OF STUDENTS ATTENDING THE UNIVERSITY OF MARYLAND

SESSION OF 1924-25.

College of Agriculture		266
College of Arts and Sciences		354
School of Business Administration		620
	Regular 230	
	Extension 390	
School of Dentistry		479
College of Education		410
	Regular 97	
	Extension 313	
College of Engineering		209
Graduate School		74
College of Home Economics		24
School of Law		550
School of Medicine		354
School of Nursing		99
School of Pharmacy		228
Summer School, 1924, College Park		486
Summer School, 1924, School of Business Administration		52
Total		4205
Duplications		160
Net Total		4045

GRADUATES OF UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, JUNE 6, 1925.

Balcerzak, Stanley Paul.....Pennsylvania
Briglia, Nicholas Natale.....Pennsylvania
Brown, Leo T.....District of Columbia
Byerly, Marshall Paul.....North Carolina
Cadle, William Rodman.....Maryland
Cardinale, Pasquale F.....New Jersey
Caso, Jose.....Porto Rico
Clahr, Abraham Albert.....New York
Coe, John Marburg.....Maryland
Coonan, Thomas Joseph, A.B.....Maryland
Cope, Arthur Alexander, A.B...Pennsylvania
Dodd, Benjamin Roscoe, A.B., North Carolina
Dodge, Eva Francette, A.B...North Carolina
Draper, Leonidas McFerrin, A.B., North Carolina
Dreskin, Jacob Louis.....New Jersey
Eastland, John Sheldon, A.B.....New York
Elgin, Lee William.....Maryland
Ellis, Francis A., A.B.....Maryland
Epstein, Harry Herman.....New York
Everett, Franklin Redman.....Maryland
Fancher, Henry Wilson, Jr., B.S., Connecticut
Farber, Raphael.....Pennsylvania
Fields, Abijah Clements.....Alabama
Fischman, Harold H.....New Jersey
Friedman, Bernard.....New York
Fuchs, Abner M.....New York
Gale, Louis Harry.....Pennsylvania
Gaston, Willaim Bryan.....West Virginia
Glattens, Wilbur Elton, B.S.....Maryland
Glick, Samuel, A.B.....Maryland
Gurley, Hubert Taylor.....North Carolina
Hall, Cecil Maurice, B.S.....West Virginia
Hammond, Kent Cato, B.S.....West Virginia
Herbert, Alpha Nathan.....New Jersey
Hertz, Ben.....New York
Hofler, Ralph Haynes.....North Carolina
Howell, James Gerald, B.S.....Pennsylvania
Hulia, Jaroslav.....Maryland
Jacobs, Morris Albert.....Maryland
Keating, John Patrick.....Connecticut
Kimbrough, Joseph William, Jr., North Carolina
Knotts, William Kenneth.....Maryland
Laus, Edward Raymond.....New York
Leibensperger, George Franklin, Pennsylvania
Lennon, William Earle.....North Carolina
Linde, Samuel Arthur.....Maryland
London, Daniel.....New York
Lowe, Claude Milton.....Pennsylvania
McAnally, Alfred Loomis.....North Carolina
Miller, Edgar Raymond, A.B...Pennsylvania
Minnefor, Charles A.....New Jersey
Montani, Anthony Carmen, B.S.....Ohio
Nataro, Joseph.....New Jersey
Navarro, Vicente Aguirre, A.B., Philippine Islands
Nelson, James Wharton, A.B.,.....Maryland
Nock, Randolph Maxwell.....Maryland
Oshrin, Henry.....New Jersey
Pinsky, Myer Mordecai.....New Jersey
Plassnig, Edwin, B.S.....Maryland
Polizotti, Joseph Louis.....New Jersey
Pulaski, Leo Edward.....Pennsylvania
Rathsprecher, Isadore.....New Jersey
Reynolds, Knight, B.S.....West Virginia
Richmond, Lewis Cass, Jr., A.B...Kentucky
Roberts, Bryan Nazer, A.B...North Carolina
Sarnoff, Jack.....New York
Silverstein, Jacob Maurice.....New Jersey
Simon, Joseph Ralph.....Pennsylvania
Simpson, Henry Hardy, A.B...North Carolina
Sinton, William Allen.....Virginia
Spelsburg, Walter William, B.S. West Virginia
Sulman, William Richard.....Pennsylvania
Tomaiuoli, Michael Francis.....New Jersey
Turner, Thomas Bourne, B.S.....Maryland
Vila-Morales, Jaime.....Porto Rico
Visconti, Joseph Albert.....New Jersey
Ward, William Titus, A.B.....North Carolina
Wassersweig, Martin Max.....Pennsylvania
Widmeyer, Robert Samuel, B.S., West Virginia
Wiener, Joseph.....New York
Wilson, Paul Russell, B.S.....West Virginia
Winstead, John Lindsay.....North Carolina
Zimmerman, Charles C.....Maryland

PRIZEMEN

University Prize—Gold Medal—EDGAR R. MILLER, A.B.

Certificates of Honor

THOMAS B. TURNER, B.S.
HAROLD H. FISCHMAN
ALPHA N. HERBERT
BEN. HERTZ
ISADOR RATHSPRECHER

In the third year the Dr. Jose L. Hirsh Memorial Prize of $50.00 was awarded to Elizabeth B. Sherman for the best work in Pathology during the second and third years.

ALUMNI ASSOCIATION SCHOOL OF MEDICINE

President

W. S. Love, M.D.

First Vice-President

H. A. Cantwell, M.D.

Second Vice-President

Noble P. Barnes, M.D.

Third Vice-President

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G. M. Linthicum, M.D.

Alumni Council

Charles Bagley, Jr., M.D.

Necrologist

W. J. Todd, M.D.

Executive Committee

Robert Mitchell, M.D.

Frank Jennings, M.D.
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R. P. Bay, M.D.
H. A. Hill, M.D.

Advisory Committee

F. Keating, M.D.

S. G. Davis, M.D.
A. E. Goldstein, M.D.
J. W. Ebert, M.D.
R. D. West, M.D.

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The following constitute the Board of Trustees of this Fund:

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This Board is incorporated by act of the Legislature of the State, its legal title being "The Trustees of the Endowment Fund of the University of Maryland," and is independent and self-perpetuating. Its powers are limited *to the expenditure of the interest derived from the fund,* which is to be applied in the discretion of the Board for the benefit of the University. Contributions, donations and bequests are solicited from Alumni and friends. They may be made to the general or University Fund, to the Medical Fund or to any other department of the University. If intended for the School of Medicine, they may be given to the general medical fund or to some special object, as building, research, library, pathology, hospital, publication, laboratories, gymnasium, scholarship, medal, prize, etc., in which case the wishes of the donor will be strictly regarded. Attention is invited to the "Charles Frick Research Fund," already established in memory of that distinguished investigator. Checks should be made payable to J. M. H. Rowland, Treas., Lombard and Greene Streets, Baltimore, Md.

FORMS OF DEVISE OR BEQUEST.

To School of Medicine.

I give, devise and bequeath to the Regents of the University of Maryland, a corporation incorporated under the laws of the State of Maryland, for the benefit of the Faculty of Physic.....
(Here state amount or describe property.)

To Endowment Fund.

I give, devise and bequeath to the Trustees of the Endowment Fund of the University of Maryland, a corporation incorporated under the laws of the State of Maryland, for the benefit of the Faculty of Physic.....
(Here state amount or describe property.)

SCHOOLS OF NURSING.

THE UNIVERSITY OF MARYLAND SCHOOL OF NURSING.

FACULTY AND INSTRUCTORS

Superintendent of Nurses and Director of School of Nursing
ANNIE CRIGHTON, R. N.

Assistant Superintendent of Nurses
STELLA R. RICKETTS, R. N.

Instructor in Nursing
MILDRED W. EVERETT, R. N.

Instructor in Nursing and Supervisor of Wards
LOUISE L. SAVAGE, R. N.

Assistant Instructor in Nursing and Supervisor of Wards
GRACE ELGIN, R. N.

Instructor in Surgical Technique for Nurses and Supervisor of Operation Pavilion
ELIZABETH AITKENHEAD, R. N.

Instructor in Dietetics
MIRIAM CONNELLY

Instructor in Massage
EDITH WALTON

Instructor in Social Service
GRACE PEARSON, R. N.

HELEN DUNN, R.N.....Supervisor
LILLIAN K. MCDANIEL, R.N.....Supervisor, Nurses Home
JANE MOFFATT, R.N.....Supervisor, Dispensary
LENA STOUFFER, R.N.....Head Nurse, Obstetrical Ward
LEONA MCMAHON, R.N.....Head Nurse, Private Hall
BERTHA HOFFMAN, R.N.....Head Nurse, Private Hall
MARIE DAVIS, R.N.....Head Nurse, Women's Ward
HELEN MORGART, R.N.....Head Nurse, Men's Medical Ward
MARY SHAFFER, R.N.....Head Nurse, Men's Surgical Ward
MARGARET MCCORMACK, R.N.....Head Nurse, Men's Surgical Ward
IDA NAGEL, R.N.....Assistant in Operating Room

LECTURERS FROM THE SCHOOL OF MEDICINE.

Anatomy
C. L. Davis, M.D.

Physiology
A. H. Ryan, M.D.

Bacteriology
F. W. Hachtel, M.D.

Chemistry
Frank N. Ogden, M.D.

Materia Medica
C. C. Habliston, M.D.

Medicine
Maurice C. Pincoffs, M.D.
L. A. M. Krause, M.D.
J. S. Hogan, M.D.
V. L. Ellicott, M.D.

Pediatrics
Charles L. Summers, M.D.

Psychiatry
R. McClury Chapman, M.D.

Neurology
G. M. Settle, M.D.

Skin and Venereal Diseases
Harry M. Robinson, M.D.

Ophthalmology
Harry Friedenwald, M.D.

Otology
J. W. Downey, M.D.

Surgery
Joseph L. Holland, M.D.

Laryngology and Rhinology
E. A. Looper, M.D.

Gynecology
Hugh Brent, M.D.

Orthopaedic Surgery
R. Tunstall Taylor, M.D.

Obstetrics
L. H. Douglass, M.D.

Social Service
Special Lecturers

STUDENTS ENROLLED 1924-1925

Seniors	16
Intermediates	21
Juniors and Preparatory	28
Total	65

GENERAL STATEMENT.

The University of Maryland School for Nurses was established in the year 1889.

Since that time it has been an integral part of the University Hospital, coming under the same government.

The school is non-sectarian, the only religious services being morning prayers.

The University Hospital is a general hospital containing about 250 beds. It is equipped to give young women a thorough course of instruction and practice in all phases of nursing including experience in the operating room.

The school offers the student nurse unusual advantages in its opportunity for varied experience and in its thorough curriculum taught by best qualified instructors and members of the Medical Staff of the University.

Admission—Requirements: In order to become a candidate for admission to the Training School, application must be made in person or by letter, to the Superintendent of Nurses. An application by letter should be accompanied by a statement from a clergyman testifying to good moral character and from a physician certifying to sound health and unimpaired faculties. No person will be considered who is not in a good physical condition between the ages of 18 and 35. She must also show that she has a High School education or its equivalent. This is the minimum requirement, as women of superior education and culture are given preference provided they meet the requirements in other particulars.

The fitness of the applicant for the work and the propriety of dismissing or retaining her at the end of her term of probation, is left to the decision of the Superintendent of Nurses. Misconduct, disobedience, insubordination, inefficiency, or neglect of duty are causes for dismissal at any time by the Superintendent of Nurses, with the approval of the President of the University.

Time: Students are admitted in February, June and September.

HOURS ON DUTY: During the probation term the students are on duty not more than six hours daily. During the Junior, Intermediate and Senior years, the students are on eight hour day duty, with six hours on Sunday and Holidays, and ten hour night duty. The night duty periods are approximately two months each, with one day at the termination of each term for rest and recreation. The period of night duty is approximately five or six months during the three years.

SICKNESS: A physician is in attendance each day, and when ill all students are cared for gratuitously. The time lost through illness in excess of two weeks, during the three years must be made up. Should the authorities of the school decide that through the time lost the theoretical work as not been sufficiently covered to permit the student to continue in that year, it will be necessary for her to continue her work with the next class.

VACATIONS: Vacations are given between June and September. A period of three weeks is allowed the student at the completion of the first year and four weeks at the completion of the second year.

EXPENSE: A student receives her board, lodging and a reasonable amount of laundry from the date of entrance. During her period of probation she provides her own uniforms made in accordance with the hospital regulations. After being accepted as a student nurse she wears the uniform furnished by the hospital. The student is also provided with textbooks and in addition to this is paid five dollars ($5.00) a month. Her personal expenses during the course of instruction and training will depend entirely upon her individual habits and tastes.

GENERAL PLAN OF INSTRUCTION

The course of instruction covers a period of three years.

JUNIOR YEAR.

First Term.

The Junior Year is divided into two periods. The first term is the preparatory period (4 months) and the second the junior term.

In the preparatory term the student is given practical instruction in:

I. The making of hospital and surgical supplies. The cost of hospital materials, apparatus and surgical instruments.

II. Household economics and the preparation of foods.

III. The hospital out-patients department and dispensary.

During this term the practical work is done under constant supervision, and teaching is given correlatively.

Excursions are made to markets, hygienic dairies, linen rooms, laundry and store room.

The maximum number of hours per week in formal instructions divided into laboratory and lecture periods is thirty hours and includes courses in Anatomy and Physiology, Dietetics, Materia Medica, Personal Hygiene, Drugs and Solutions, Household Economics, Short course in Ethics and History of Nursing.

At the close of the first half of Junior Year the students are required to pass satisfactorily both the written and oral tests, and failure to do so will be sufficient reason to terminate the course at this point.

SUBSEQUENT COURSE.

The course of instruction, in addition to the probationary period, occupies two and three-fourths years, and students are not accepted for a shorter period.

After entering the wards, the students are constantly engaged in practical work under the immediate supervision and direction of the head nurses and instructors.

JUNIOR YEAR.

Second Term.

During this period the students receive theoretical instruction in Massage, Bacteriology, General Surgery and Introductory Medicine. Practical instruction is received in the male and female, medical, surgical and childrens' wards.

INTERMEDIATE YEAR.

During this period the theoretical instruction includes Pediatrics, General Medicine, Infectious Diseases, Obstetrics, Gynecology and Orthopaedics. The practical work provides experience in the nursing of obstetrical and gynecological patients, in the operating rooms and the out-patient department.

SENIOR YEAR.

During this period the student receives short courses of lectures on subjects of special interest. This includes a consideration of the work of institutions of public and private charities, of settlements, and various branches of professional work in nursing.

Experience is given in executive and administration work to those showing exceptional ability in the Senior Year. With these students conferences are held on administration and teaching problems.

EXAMINATIONS: At the end of the first half year, students are examined in Anatomy, Physiology, Materia Medica, Dietetics and Hygiene. At the end of the first year in Surgery and Bacteriology.

During the second year they are examined in Urinalysis, Massage, Gynecology, General Medicine, Infectious Diseases, Obstetrics and Pediatrics. At the end of the third year the final examination in Nervous and Mental Diseases, Diseases of Special Senses, Venereal Diseases, Ethics and History of Nursing.

Examinations—which are both written and oral—include practical tests, and the standing of the student is based upon the general character of work throughout the year, as well as the results of the examinations. Students must pass all subjects before entering upon the work of the following year.

GRADUATION: The diploma of the School will be awarded to those who have completed satisfactorily the full term of three years and have passed successfully the final examinations.

SCHOLARSHIPS: One scholarship has been established by the Alumnae of the Training School. It entitles a nurse to six weeks course at Teachers College, New York. This scholarship is awarded at the close of the third year to the student whose work has been of the highest excellence, and who desires to pursue post-graduate study and special work.

An Alumnae Pin is presented by the Women's Auxiliary Board to the student who at the completion of three years shows exceptional executive ability.

GRADUATES, 1925.

Barr, Alberta	Maryland
Croll, Mildred	Maryland
Cannon, Elizabeth	Delaware
Coulter, Zelda	North Carolina
Forrest, A. Louise	Pennsylvania
Frick, Esther	Pennsylvania
Fletcher, Grace	North Carolina
Hathcock, Mary	North Carolina
Kirtner, Mattie	Virginia
Nock, Myrtle	Maryland
Scott, Mary	Maryland
Shatzer, Myrtle	Maryland
Wall, Laura	North Carolina
Whitley, Estelle	North Carolina
Walter, Charlotte	Maryland

FIVE-YEAR PROGRAM.

In addition to the regular three-year course of training the University offers a combined Academic and Nursing program leading to the degree of Bachelor of Science and a Diploma in Nursing.

The first two years of the course (or pre-hospital period), consisting of 70 semester hours, are spent in the College of Arts and Sciences of the University, during which period the student has an introduction to the general cultural subjects which are considered fundamental in any college training. At least the latter of these two years must be spent in residence at College Park in order that the student may have her share in the social and cultural activities of college life. The last three years are spent in the School of Nursing in Baltimore. In the fifth year of the combined program certain elective courses such as Public Health Nursing, Nursing Education, Practical Sociology and Educational Psychology are arranged.

TWO-YEAR PROGRAM IN THE COLLEGE OF ARTS AND SCIENCES.

Freshmen Year.

	Semester I	Semester II
English Composition and Rhetoric (Eng. 101)	3	3
Foreign Language	4–3	4–3
General Chemistry (Chem. 101)	4	4
Elements of Social Science (Soc. Sci. 101)	3	3
Elementary Foods (H. E. 101)	3	3
Physical Education	1	1
	18	18

Sophomore Year.

English Literature or History	3	3
Organic and Food Chemistry	3	
Nutrition		3
General Economics (Econ. 105)	3	
Elements of Psychology (Psych. 101)		3
Gen. Zoology (Zool. 101)	4	
Public Speaking (P. S. 101-102)	1	1
Physical Education (Phys. Ed. 102)	2	2
Electives	1	5
	17	17

MERCY HOSPITAL SCHOOL OF NURSING.

The Mercy Hospital School of Nursing was organized and incorporated under the laws of the State of Maryland in 1899 and has operated successfully for a quarter of a century.

The course of study is three years, during which time the Superintendent of the School assigns each pupil for definite periods to the various wards and services. Such practical training under skilled supervisors best applies the *science* and most adequately teaches the *art* of nursing. The course of study is modified and revised year by year, always with the idea of improvement. In schools of nursing, as in all other professional schools, changes are necessary, for to stand still is to retrograde. Each year new subjects are introduced or old ones are taught in new and more attractive ways. The curriculum embraces a preliminary period of four months, a junior term of eight months, an intermediate term of twelve months and a senior term of twelve months.

Mercy Hospital being attached to the Medical School of the University of Maryland, its nurses enjoy the exceptional advantage of systematic courses of lectures covering every department of nursing. These lectures, given by professors who are masters of their subjects, are made to co-ordinate with the school curriculum, thus giving the student nurse a thorough knowledge of her profession.

REQUIREMENTS FOR ADMISSION.

Applications for admission to the School of Nursing should be addressed to Superintendent of Nurses, Mercy Hospital, Baltimore, Md.

Requirements: Highest moral standard, intelligence, health, high-school education. Social references and letters from pastors and physicians are also required.

The course comprises three years of theory and practice. After four months' probation, candidates, if they possess the necessary qualifications, are admitted to the School proper, receiving Ten Dollars per month; their education being considered their compensation. Board, laundry, etc., furnished by the institution.

Four weeks before admission, candidates should forward $35.00 and measurements for uniforms and aprons, which will be in readiness on their arrival. No orders will be considered until this amount is received. These uniforms are worn throughout entire course, thus obviating additional expense after the probationary term expires. All clothing should be distinctly marked with names, Style No. 28, which may be procured from Woven Name Tape Co., Winstead, Conn. On admission, $10.00 is deposited on account of books.

Hours of duty: 7 A. M. to 7 P. M., with three hours off and one hour for meals, making an eight-hour system, one afternoon every week, and two weeks' vacation annually.

If nurses desire to remain out after 9:30 P. M. permission must be secured from the Superintendent. Late permission until 11:30 P. M. may be obtained once every two weeks, from June to September, and once a month from September to June. No visitors allowed except when off duty.

The right is reserved to dismiss pupils for any cause that may be deemed sufficient by the Superintendent of Nurses.

Dentistry should be attended to prior to entrance. Candidates should come provided with watch with second hand, fountain pen, scissors and comfortable shoes with rubber heels not too high; plain underwear, soap, towels, three laundry bags, shoe case and napkin ring.

Address baggage to Nurses' Home, Mercy Hospital, Pleasant and Calvert Streets, Baltimore, Md.

GRADUATES OF 1925.

Boch, Mary Elizabeth.....Maryland
Boyle, Mary Agnes.....Pennsylvania
Busick, Gertrude Metzger.....Maryland
Carney, Gertrude.....Maryland
Clark, Mabel Marie.....Maryland
Foley, Rosemary Cecilia.....West Virginia
Gambino, Mae Adeline.....West Virginia
Garvey, Mary Cecilia.....Maryland
Hardin, Mildred Ruth.....Maryland
Hollingsworth, Mary Hazel.....Virginia
Kenly, Margaret Mary.....Pennsylvania
Kern, Rosalie Caroline.....Ohio
Lingg, Mabel Mary.....Pennsylvania
Loraditch, Mary Agnes.....Pennsylvania
Rider, Jessie Elizabeth.....Maryland
Rider, Veronica Ellen.....Pennsylvania
Reynolds, Monica Cecilia.....Maryland
Spellenberg, Dolores J.....Pennsylvania

UNIVERSITY OF MARYLAND

BULLETIN

OF THE

SCHOOL OF MEDICINE

VOL. X OCTOBER 1925 No. 2

VACCINO-THERAPY IN TYPHOIDAL OSTEOMYELITIS

By NATHAN WINSLOW

From the Surgical Department of the University of Maryland.

Since little has been written on the use of the specific antityphoid vaccines in the treatment of the posttyphoidal bone lesions, a short review of the subject may be of interest to our readers. According to Rathery (Bull. et mém. d. l. Soc. méd. d. hôp. d. Paris, 1921, 3. s., xlv, 470), typhoidal periostitis was treated successfully by local injections of antityphoid serum in the proximity of the lesion itself, in 1902, at Bastion, when he was an interne to Chantemesse; but the writer fails to mention why the information had been withheld until such a late date.

In an article published in the Bull. d. l'Acad. de méd., Paris, 1922, 2. s., lxxxvii, 517, Vincent credits Remlinger as being the pioneer vaccinationist in the posttyphoidal bone dyscrasias and furnishes as substantiatory evidence the context of a communication to him from the latter, dated November 5, 1913, in which Remlinger says that he had cured a posttyphoidal tibial periostitis by the injection of vaccine. The first detailed account of serum therapy for the relief of typhoidal osseus inflammatory disease was published, so far as a most careful search of the literature would permit me to judge, by Rosenberger (New York Medical Journal, 1911, xciii, 927); but to Emile-Weil belongs the credit of stressing the marvelous curative influence exerted by vaccino-therapy, either alone or in association with operation, upon the stubborn cases of posttyphoidal osteopathies, whether of the plastic or suppurative types (Bull. de l'Acad. de méd., Paris, 1917, 3. s., lxxvii, 109; La Presse médicale, Paris, 1917, xxv, 483; Bull. et mém. d. l. Soc. méd. d. hôp. d.

Paris, 1921, 3. s., xlv, 449, and Le Monde Médical, Paris, 1922, xxxii, 171).

While I have exerted every effort to make a complete round up of every example of posttyphoidal osteomyelitis treated by vaccino-therapy and placed on record, it is only natural that in an investigation of the sort some will be inadvertently overlooked. I have omitted from my study because of the lack of confirmation the cases of Chantemesse, of Remlinger, and 4 of the 18 cases Emile-Weil claims to have treated as well as the case of typhoid spine in a confrere, cured by antityphoid serum, of which Emile-Weil says he had knowledge. All of the four rejections in the series of Emile-Weil were banal infections and in one only had specific antityphoid serum therapy been used, but without benefit. It did serve, however, the very useful purpose of a check to the diagnosis. With these deletions there remain for study 33 instances of posttyphoidal osseous relics treated by specific antityphoid serums. (See table.)

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
1	Rosenberger: New York Med. Jour., 1911, xciii, 927.	40 M Dec. 31, 1909	Suppurative osteomyelitis. About 2 weeks after onset of typhoid. Left 7th costal cartilage. Typhoid bacillus from the discharged pus. Not mentioned.	While still abed pain developed in the lower left chest, followed 6 weeks later by a swelling, which broke about the middle of October, 1910, giving exit to a serous, occasionally serosanguinolent, discharge. Bone lesion ran an afebrile course.	No	Dec. 10, 1910, a vaccine was made from the isolated germ, and on Dec. 23rd, 1.5 c. c. of this preparation was injected into the patient's arm. After 7 such inoculations at 6 day intervals the tract closed and was still firmly united 12 weeks later. There was then no pain or soreness, no swelling, nothing to indicate that the disease ever existed, except the scars. The last inoculation was given Feb. 5, 1911. Rosenberger did not standardize his vaccine, believing such estimations only at best approximately correct.	Complete cure.
2	Sharpless: Jour. Am. Med. Assn. 1912, lviii, 1114.	32 M 6 years before.	Suppurative osteomyelitis. 4th week of convalescence. Middle of right tibia. No mention. No mention.	A month after recovery he noticed in the right tibia an area of tenderness and puffiness. Pain was insignificant. The disability did not interfere with his work. The affection persisted and the area involved gradually extended upward until it reached within an inch of the tubercle of the tibia.	No	Nov. 20, 1911, 90,000,000 dead typhoid bacilli were injected into the right ankle and 10 days later followed by an inoculation of 180,000,000. The 2nd treatment was succeeded by an intense local reaction, much pain and a temperature of 102 degrees F. One week later the patient announced that his leg was well. The injection of 180,000,000 were continued, however, at 10 day intervals. According to the last report, March 12, 1912, there was a trifling edema of the leg which disappeared overnight, but no pain or tenderness. Subjectively the man was well.	Cure.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
3	Dachtler: Am. Jour. Roentgenology, Detroit., 1913-1914, n. s., i, 252.	22 F First of year, 1909.	Rarefying osteitis and periosteal inflammation. During convalescence. Right tibia. None mentioned. None mentioned.	She was seen in March, 1909, during convalescence from a typhoid which had run an uneventful course. Her right leg above the ankle had been hurting her for three weeks and for one week there had been pain in the left leg about the same locality. Both legs were X-rayed, the right showing a rarefying osteitis and a periostitis of the lower third of the tibia; the left tibia was normal. Despite the operation, the patient again sought medical advice in April, 1912, for incapacitating pain in the legs. Both tibae were irregular, swollen and tender. X-ray examination showed at the lower third of the right tibia marked periosteal new bone formation and in its upper part a similar area. The finding suggested lues, but as there was nothing in the history to substantiate this impression, the disease was thought to be congenital. A Wassermann test was negative, nevertheless she was given antiluetic treatment, but without benefit, so a course of antityphoid treatment was substituted. However, on Dec. 6, 1912, in consequence of a single plus Wassermann, and suggestive X-rays, an injection of neosalvarsan was administered, but on Dec. 20, as the Wassermann again proved negative, a further course of antityphoid inoculation was advised. This was begun in March, 1913.	Trephinement of right tibia, closure of the wound, healing by first intention, March, 1909. Unsuccessful.	As antiluetic treatment proved ineffectual, during the early part of July, 1912, antityphoid vaccination was substituted in full doses, the last injection being given on July 15, 1912. Three days later the patient reported that the pain was much less. There had never been any relief during the specific treatment. In March, 1913, a new course of antityphoid inoculations was instituted and continued at irregular intervals over some period. When last seen, Sept. 20 1913, the pain in the legs had ceased. An X-ray examination made now showed no evidence of the bone change upon which the diagnosis of congenital syphilis was based.	Cured.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
4	Dachtler: Amer. Jour. Roentgenology, Detroit, 1913-1914, n. s., i, 252.	44 F About 1900. Severe.	Osteitis. During convalescence. Right tibiae, 12 years later both tibiae and right clavicle. Not mentioned. Not mentioned.	Patient was first seen in June, 1912. At the age of 32, she had had an attack of typhoid, which kept her in bed for 2 months. A few weeks after getting up a walnut sized lump developed in the right shin bone and another on one of the ribs. These persisted for two years, but finally disappeared without operation. On admission the patient had no fever, but a white blood cell count of 11,000. Examination revealed marked roughness of both tibiae, as well as 2 tender nodules in the right clavicle, situated at its middle and sterno-clavicular segments, respectively. The Roentgenogram of the clavicle was unsatisfactory from a slight movement, the right tibia showed a thickening in the middle portion and the left tibia thickening of its anterior margin for two-thirds of its length. The picture was that of a luetic osteitis and was so considered. In July, 1912, a negative Wassermann was obtained; and in 1910, she had been given a course of mercury by injection over a period of several months without benefit.	No	During July, August and September, 1912, the woman was given 16 injections of typhoid vaccine, the first a half dose, the balance of 1,000,000,000 dead bacilli. During the course of these treatments the pain and tenderness in the legs and clavicle were relieved. In February, 1913, the patient was feeling entirely well. When last seen in September, 1913, there had been no recurrence of symptoms. Roentgenograms at that time showed no marked change in the bone picture.	Symptomatic cure.
5	Ciuca et Enescu: Ann. de l'Instit. Pasteur, Paris, 1920, xxxiv, 358.	Soldier Male October 25, 1917.	Osteoperiostitis. 18th day of convalescence. Radius lower end and on the 35th day a nut sized node on the an-	Blood culture, in bile, made on the 12th day of the illness was positive for typhoid fever despite a course of antityphoid, paratyphoid and cholera inoculations in July, 1917. The patient was defervescent on Nov.	No	December 27, 1917, an inoculation of autogenous vaccine was administered. The temperature rose, the diseased areas became more sensitive, the puffiness of the surrounding tissues increased. On	Four injections of vaccine produced a complete cure in 11 days.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
			terior portion of the 7th rib. No. Not mentioned.	23, 1917. Eighteen days later, the temperature rose and the patient complained of pain in the right forearm. This was accompanied by a thickening of the radius at its lower part and the surrounding tissues were edematous and tender on pressure. Blood culture in bile was now negative. The temperature gradually returned to normal, but the osteomyelitic process persisted without modification. On December 25, 1917, the temperature again ascended, as the result of involvement of the 7th rib. It was therefore decided to try the effect of vaccino-therapy.		December 30, the second injection was given, and on January 2, 1918, a third, without either local or general reaction. The pain at the site of the disease had now left and the inflammation was diminishing. January 4, 1918, a fourth inoculation was administered. After this dose the osteomyetitic process diminished visibly. January 6, both nodes had completely disappeared and there was scarcely a trace of thickened bone recognizable.	
6	Romero: Bull. Soc. pathol. exot., Paris, 1922, xv, 5; also in La tribuna medica, Santiago de Chili, 1920, May, No. 5.	32 M	Suppurative osteomvelitis. After an injury. Right ulna. B. paratyphoideus B, eight months later from a pus pocket. Widal positive 1/200.	Was well until he injured his right forearm by the swinging to of a door. The skin was unbroken. The pain was intense. Slowly there developed at the site of the contusion a painless swelling which burst 15 days later and let escape a large amount of thick creamy pus. The abscess closed down to a fistulous tract which discharged a few drops of pus daily. Despite a negative Wassermann antileutic treatment was instituted, but without result. An X-ray examination showed a thickening of the ulna at the site of the contusion. Here the osteitis appeared in a man apparently in good health. However, at ten years of age he had had a febrile icterus. Moreover, he had	Having lost confidence in the perseverence of the patient, an operation was proposed which showed the bone in a good way to recovery.	This case was first treated by vaccino-therapy. At the end of 15 injections, made once daily, the sinus had dried up and the patient disappeared from view. The fistula recurred, however, and a month later, the patient returned. A new series of 15 injections closed the fistula again and once more the man was lost to view, to return later with the tract reopened.	Cured.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
				been a member of a ship's crew, among whom a typhoid epidemic had raged. Although he had nursed many of his shipmates, he had entirely escaped the disease. What part either of these experiences had in the causation of the osteomyelitis can be merely a surmise.			
7	Sicard in Sicard et Robineau; Bull et. mém. d. l. Soc. méd. d. hôp. d. Paris, 1921, 3. s., xlv, 467.	22 M	Suppurative osteomyelitis. Six months after convalescence. Right tibia. The Eberth bacillus. Not mentioned.	Six months after convalescence from a typhoid attack, the patient began to have pain at the inferior end of the right tibia. There was an increase in the size of the bone, both clinically and radiographically. During the attack the Widal was positive.	Under general anesthesia an incision was made down to the diseased bone. A sero-purulent discharge poured out from beneath the periosteum, the underlying bone was curetted.	This man had daily injections of the antityphoid serum the three days preceding the operation, which procedure was repeated on each of the 10 days succeeding.	Rapid cure without fistula formation in 12 days.
8	Robineau in Sicard et Robineau: Bull. et mém. d.l. Soc. méd. d. hôp. d. Paris, 1921, 3. s., xlv, 469.	40 F July, 1920.	Suppurative osteomyelitis. Not mentioned. One of the left lower costal cartilages. Bacillus typhosus. Not mentioned.	This patient entered the hospital, January 5, 1921, for a cold abscess in the antero-inferior left thoracic region. On puncture a thick pus was obtained. The aspiration was promptly followed by fistulization. A positive Widal was obtained during the original illness.	After antityphoid vaccination had proven ineffectual, a debridement was done with curettage of the costal cartilage, which was found eroded and necrosed in its entire thickness, Feb. 23, 1921. March 11, 1921, there was still a slight weeping from the wound.	About the middle of January, 1921, ten injections of antityphoid vaccine was administered with no benefit to the local condition. The failure was attributed to the presence of necrosed cartilage.	Vaccine therapy previous to operation proved unsuccessful.

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9	Robineau in Sicard et Robineau: Bull. et mém. d. l. Soc. méd. d. hôp. d. Paris, 1921, 3. s., xlv, 468.	27 F January 1, 1920.	Suppurative osteomyelitis. February 12, 1920. Sternum. Typhoid bacillus alone. Not mentioned.	Seen February 12, 1920, for a cold abscess at the upper end of the sternum which was slow in growth and torpid in character. The condition remained stationary until the beginning of April, when there was an increase in its size and spontaneous fistulization on April 16, 1920.	Slight debridement for retention of pus, April 30, 1920.	The first injection of the antityphoid vaccine was administered May 4 and the second, May 6, 1920.	Patient quit the hospital on May 9, 1920. The wound was completely healed by May 15, 1920.
10	Sicard et Meunier in Sicard et Robineau: Bull. et mém. d. l. Soc. méd. d. hôp. d. Paris, 1921, 3. s., xlv, 468.	30 M December, 1913.	Osteomyelitis. Six years after the original fever. Right femur. Not mentioned. Not mentioned.	Six months after the attack of fever, the patient experienced pains in the lower left extremity, which were attributed to a sciatica. During the entire period of the World War he saw very active service with the artillery, and from time to time complained of some vague pains. In December, 1919, he suffered from an attack of very severe pain in the right thigh and a hydrops of the right knee. The temperature was raised. The illness lasted two months and was considered rheumatism. In May, 1920, there was a new attack patterning after the preceding. Now, on palpation a mass was felt in the lower third of the right femur. A radiographic examination showed an enlargement of the bone at this point. The agglutination test for typhoid was positive, but a blood culture proved negative.	After failure of vaccino - therapy Capette performed a debridement which set free a collection of pus, June, 1920. Rapid cure after operation, with no return to date of report, 1921.	Antityphoid serum was administered in June, every two days to the extent of five doses, without any appreciable amelioration in the condition, and it was therefore discontinued in favor of operative measures.	Cured by combined sero-therapy and operation.
11	Sicard in Sicard et Robineau: Bull. et mém.	24 F Not stated.	Suppurative osteitis. 18 months after the typhoid.	Agglutination test positive. Despite the culture from the pus yielded staphylococci, antityphoid serum effected a cure.	Simple incision of one of the abscesses, aspiration of the other two	For 15 consecutive days an injection of the combined typhoid and paratyphoid serum was made. This effected a	Cure.

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	d. l. Soc. méd. d. hôp. d. Paris, 1921, 3. s., xlv, 468.		Sternum, right 7th costal cartilage, left 5th costal cartilage. Staphylococci and other cocci. There was not time to devote to a thorough bacteriological research. Not mentioned.		with the injection of oil of gomenolee. Suppuration and fistulization persisted for three months, it was therefore decided to try vaccino-therapy.	cure of all of the bone lesions in three weeks. There had been no return in 1920.	
12	Sicard et Robertson in Sicard et Robineau: Bull. et mém. d. l. Soc. méd. d. hôp. d. Paris, 1921, 3. s. xlv, 469.	35 M 1919.	Suppurative osteomyelitis. Four months after typhoid. Sternum. Not made. Not mentioned.	This man had had an attack of typhoid six months before and for two months an osteitis of the sternum with abscess formation, for which iodoform oil had been injected, but the abscess reformed and broke with the elimination of a small piece of bone. The patient had never been immunized. The bacillus typhosus had never been sought for in the pus from the abscess. A Widal was positive.	No	The patient received 14 injections of antityphoid serum at two day intervals without result. The fistula persisted for three months when quite a large sequestrum was extruded. The cure was then rapid and had persisted to the end of 1920.	Cured only after the extrusion of a sequestrum.
13	Sicard et Michely in Sicard et Robineau: Bull. et mém. d. l. Soc. méd. d. hôp. d. Paris, 1921, 3. s. xlv, 649.	34 F 1919.	Osteomyelitis. Eleven months after the typhoid. Left tibia. Not mentioned. Not mentioned.	At the time specified, the patient was seized with pains in the leg which were taken for a sciatica. Later there was a tumefaction at the upper end of the left tibia. The typhoid agglutination test was positive.	No	After a daily injection of antityphoid serum for 16 doses, a cure was effected, the tumefaction disappeared and the pain ceased. There had been no return of the symptoms at the end of 1920.	Complete cure.
14	Bureau et Marchand: Bull. méd.,	47 F May 27, 1913.	Suppurative osteomyelitis. During attack.	The fever lasted 7 weeks without any incident except violent pain in the lumbar region. It	No	The first injection of 150,000,000 dead germs prepared from the pus of the patient,	Cured.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
	Paris, 1921, xxxv, 511.		Lumbar vertebrae. Typhoid bacillus alone. No.	was only after 6 months that she could return to her work. During all this while from time to time she complained of pain in the kidneys. In January, 1914, or 8 months after the onset of the typhoid she experienced dorso-lumbar crises radiating on the right to the navel, with vague pain in the kidneys, sacrum and right hip and extending into the right thigh, knee and leg. It was more intense at night than in the day. On pressure the 3rd and 4th lumbar vertebrae were sensitive. In June, 1914, or a year after the original disease, she had to take to her bed again, the upright position was very painful and walking impossible. The lumbar furrows were swollen, and the lumbar spine rigid. At this period a phlebitis developed in the entire lower extremity, followed shortly by a similar condition in the opposite side. The general health was poor; the temperature hovered around 39 degrees C. On October 8, 1914, a hard mass appeared at the base of Scarpa's triangle on the right side, but it soon softened and fluctuated, and at almost the same time a second lump was noticed below the crease of the right buttock. October 16, 1914, both abscesses opened spontaneously and discharged 2 liters of a thick, brownish, odorless pus. The tem-		was given May 13, 1919. This was repeated every week for 7 doses in progressive amounts, the eighth inoculation containing 1.000,000,000 organisms and then continued in the same strength until 16 treatments had been administered. The cure was prompt. December 21, 1919, about a month after the last inoculation, the fistula in the groin reopened and discharged some 5 c. c. of pus, which contained neither the typhoid nor any other germ. When seen in June, 1920, the patient was in perfect health.	

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
				perature then fell. Both wounds had closed by the end of February, 1915. Between this date and February, 1917, the same process repeated itself on 5 other occasions. The pus was examined after the bursting of each abscess and always showed the typhoid bacillus in pure culture. Because of the persistence of the discharge after the 6th abscess had broken, it was decided to try autovaccines.			
15	Dufour: Bull. et mém. d. l. Soc. méd. d. hôp. d. Paris, 1921, 3. s., xlv, 364. also in Zivy: La Presse médicale, Paris, 1918, xxvi, 130; also in Guyard: Thèse Paris, 1921, obs. i, p. 46.	.... M	Osteoperiostitis. Vertebrae. Not mentioned. Not mentioned.	Guyard could furnish none of the details, as the records had been misplaced. The patient was a soldier with a post-typhoid spondylitis. It came under Dufour's control in 1917, after having resisted all other modes of treatment. Vincent (Bull. d. l'Acad. de méd., Paris, 1922, 3. s., lxxxvii, 517) classes this case in the paratyphoid B group.	No	Vaccine injections were begun on Feb. 6, 1917, with ½ c. c. of the triple anti-typhoid serum, followed a week later by 1 c. c., and then at weekly intervals 1½ c. c., until the cure was effected. Under this treatment the disease was brought rapidly to a cure.	Cured.
16	Dufour in Guyard: Thèse Paris, obs. ii, p. 46.	.... M Sept. 12, 1919. Widal positive.	Osteoperiostitis. Jan. 7, 1920. 1st lumbar vertebra. Not mentioned. Not mentioned.	Contracted typhoid, September 12, 1919; discharged, November 14, 1919, as cured. January 7, 1920, re-entered the hospital for severe pain in the lumbar region. Painful on pressure over the 1st lumbar vertebra. Pain exaggerated on the least movement, encircled abdomen and radiated into the legs, reflexes normal, did not find any zones	.....	January 21, 1920, ½ c. c. February 3, 1920, ½ c. c. Discharged March 12, 1920, in perfect health.	Cured.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
				of hyperesthesia, no anesthesia, temperature 38 degrees C., X-ray slight trouble between last dorsal and 1st lumbar. Diag. spondylitis typh.			
17	Dufour et Charron in Guyard: Thèse Paris, 1921, obs. iii, p. 48.	..... M March, 1920, proven by hemo-culture March 5, 1920.	Osteoperiostitis. July 4, 1920. Lumbar spine, 2 lower. Not mentioned. Not mentioned.	July 4, awakened by atrocious pain in the lumbar region which was treated for lumbago with the hot iron, plasters, etc. October 16, 1920, diagnosed typhoid spondylitis.	.....	Two injections of mixed vaccines; 1st, October 22, 1 c. c.; 2nd, October 30, 1¼ c. c. The pain left almost immediately and the patient completed his cure in a few weeks.	Cured.
18	Dufour, Debray et Guyard: Bull. et mém. d. l. Soc. méd. d. hop. d. Paris, 1921, 3. s., xlv, 364; also in Guyard: Thèse Paris, 1921, obs. iv, p. 51.	42 F October 22, 1920.	Osteoperiostitis. Three months after onset of typhoid. 2nd lumbar vertebra. Not mentioned. Not mentioned.	No Widal made, diagnosed as intestinal grippe. Got out of bed the middle of December, had to go back to bed 8 days later on account of pain in her back. December 20, 1920, to January 21, 1921, treated by the usual methods, without benefit. It was then that she entered the hospital, with a spondylitis of the 2nd lumbar vertebra. The pain was intense and the temperature elevated. X-ray showed nothing abnormal. The Widal was positive in the dilution of 1/150. The condition was diagnosed as a typhoid spine. Four days after admission the situation remained unchanged.	No	January 25, 1921, she received an inoculation of ½ c. c., of the mixed vaccines; four days later, January 29, 1 c. c.; February 6, 1½ c. c. To insure a satisfactory issue, three more injections of 1½ c. c. were made at ten day intervals. With the first treatment the temperature fell and after the second became normal. The pain disappeared rapidly. The last three injections were destined to consolidate the sure.	Cured.
19	Emile-Weil: Bull. acad. de méd., Paris, 1917, 3. s., lxvii, 110; also Emile-Weil et	44 M July, 1915, severe.	Non suppurative osteomyelitis. Towards the end of December, 1915. Left 8th and 9th ribs at their junction with their	This patient presented since a year an osteochondritis. The trouble began towards the end of 1915, with an ill-defined soreness, in his left ribs, for which complaint he was admitted to the hospital, December 5, 1916.	No	Vaccine treatment was begun on December 12, 1916. After the third injection the size of the mass was noticeably less, but some puffiness was still present. The first injection consisted of ¼ c. c.	Cured.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
	Chevrier: La Presse médicale, Paris, 1917, xxv, 482; also in Chéron: Thèse Paris, 1921, obs. i, p. 29.		costal cartilages. None made. No.	On examination there was a hard tumor, involving the 8th and 9th ribs. No point of softening was detectable. The integument was non-adherent. The mass was exquisitely tender to touch. The patient had never been vaccinated against typhoid fever. The serum reaction was present for the Eberth bacillus in the dilution of 1/500; para. B 1/100; para. A 1/50.		stock serum. Thereafter the inoculations were continued at the rate of 2 weekly treatments until 16 doses had been received. The man left the hospital, February 15, 1917, completely cured.	
20	Emile-Weil in Chéron: Thèse Paris, 1921, obs. ii, p. 30.	29 M May, 1917, severe.	Non suppurative osteomyelitis. One year after typhoid, May 20, 1918. Right 3rd costo-sternal articulation. None made. No.	The patient (G——— Victor) was admitted, June 13, 1918. In the May preceding he felt a severe pain at the right 3rd sterno-costal articulation and soon thereafter noticed a swelling the size of a nut. He had had 4 inoculations against typhoid; 2 in April, 1915, and 2 in May, 1916. On admission, there was a tumefaction over the right 3rd costal cartilage. The swelling was roundish, and was not tender on pressure. The agglutination test was positive, as follows: typhoid, 1/500; para. B, 1/200.	No	June 19, 1918, mixed serotherapy was instituted. After 3 injections the mass had considerably diminished in volume, and with the 5th completely disappeared. The treatment was inaugurated with small doses and quickly run up to 2 c. c. at an injection. The patient left the hospital, September 5, 1918, as cured.	Cured.
21	Emile-Weil in Chéron: Thèse Paris, 1921, obs. iii, p. 31.	40 M January, 1917.	Non suppurative osteomyelitis. March, 1917. Right 2nd and 3rd ribs near sternum. Not made. No.	The patient (B——— Pierre) was admitted, June 21, 1917. In March, 1917, he felt pains in the thoracic region, and soon noticed a swelling as large as a nut at the sternal end of the 2nd rib. This was diagnosed as a typhoidal periostitis. In May, 1917, the mass began to increase in size. An X-ray made June	No	On July 4, 1917, vaccino-therapy was begun with the typhoid and paratyphoid serum in the habitual dose. After 4 injections there was a noticeable dimunition in the volume of the foyer of osteitis. At the 16th dose, the patient was cured.	Cured.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
				16, 1917, confirmed the diagnosis. The patient had been incompletely vaccinated against typhoid in February, 1915, by 2 injections of the antityphoid serum. On admission, examination revealed at the sternal union of the right 2nd and 3rd ribs a swelling, the size of a pigeon's egg. This was hard, not painful, and did not exhibit a point of fluctuation. The Widal test was positive.			
22	Emile-Weil: Bull. acad. de méd., Paris, 1917, 3. s., lxxvii, 109; also Emile-Weil et Chevrier: La Presse médicale, Paris, 1917, xxv, 482; also in Chéron: Thèse Paris, 1921, obs. iv, p. 33.	39 M March, 1916, severe.	Suppurative osteomyelitis, closed. End of June, 1916. Left 5th costal cartilage. Not made. No.	During the latter part of June, 1916, the man (L——— Pierre) felt a soreness in the left costal cartilages. When he entered the hospital, October 31, 1916, there was a large mass in the left 5th costal cartilage near its costosternal articulation. This was not tender on pressure. The integument was not adherent. At one point in the mass there was beginning softening. This man was inoculated against typhoid by 4 injections in January, 1915, and in July, 1916, he was given 2 injections of the mixed vaccine. The Widal was positive in the dilution of 1/500; para. B, 1/50.	February 7, 1917 at operation he found a small pocket of sterile pus. Wound healed by first intention and the patient was discharged as cured, March 16, 1917.	Vaccine treatment was begun on November 15, 1916. There was no noticeable change in the mass until after the 4th injection, at which time it was slightly smaller. After the 6th injection it had completely disappeared. However, the treatment was not discontinued until 16 doses had been administered. January 5, 1917, the swelling had not reappeared, but the tip of the finger dipped into a depression, 3 cm. in diameter.	Complete cure.
23	Emile-Weil: Bull. acad. de méd., Paris, 1917, 3. s., lxxvii, 108; also Emile-Weil et	35 M October, 1914, severe.	Suppurative osteomyelitis. January, 1915. Right 4th and 5th costal cartilages. The pus contained only a few cocci,	January, 1915, a small mass appeared, and the man (F——— Jean) was evacuated for a post-typhoidal osteitis. November 28, 1916, he had a profusely discharging fistula, for which he came under Émile-Weil's care in	Type not mentioned. 1st, June 18, 1915; 2nd, September, 1915; 3rd, November, 1915; 4th, February, 1916, excision	These operations proving unsuccessful, recourse was had to vaccino-therapy, with rapid improvement after 6 injections of stock serum. The inoculations were begun on December 14, 1916, and	Cured.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
	in Chevrier: La Presse médicale, Paris, 1917, xxv, 482; also in Chéron: Thèse Paris, 1921, obs. v, p. 34.		no typhoid bacilli. No.	December, 1916. At that time the condition was not painful. A large amount of odorless, yellow pus was escaping from the fistula. A Widal was positive in the dilution of 1/500; para. B, 1/50. The man had never been inoculated against typhoid.	of 4th and 5th costal cartilages; 5th, March, 1916; 6th, May, 1916; 7th, August, 1916. Without relief, so the tactics were switched and serum treatment instituted, but with partial success only, as an 8th intervention had to be made February, 1917. Even then the cure was delayed until a supplementary course of serum therapy was given.	the course completed on January 30, 1917, with an apparent cure, but in February another operation was found necessary, followed by a supplementary course of 4 injections. The wound then closed. In May, 1917, the patient continued well.	
24	Emile-Weil in Chéron: Thèse Paris, 1921, obs. vi, p. 36.	22 M August, 1915, severe.	Suppurative osteomyelitis. November, 1915. Right tibia. Culture at 2nd operation sterile. No.	G————P had pain in the right leg, with swelling, following a typhoid in August, 1915. After some months of convalescence he was hospitalized for an abscess of the right leg. May, 1916, the abscess was incised and 2 sequestra extracted. In October, 1916, the pain reappeared in the right leg with a recurrence of the swelling. An X-ray examination showed an osteoperiostitis of the right tibia. Four more operations failing to effect a cure, the man entered the hospital, December 1, 1917. He said he had been vaccinated against typhoid in January, 1915, but his register, dated August, 1916, said he had not been vac-	1st, May, 1916, incision and extraction of sequestra; 2nd, November, 1916, curettement, no drainage, wound suppurated, sterile culture; 3rd, February, 1917; 4th, June, 1917, nevertheless tract still discharged; 5th, August, 1917, curettement. Serum therapy proving ineffectual, 6th operation, February, 1918, curettement. The wound now closed in a month	Five operations failing to effect a cure, on December 7, 1917, a course of antiparatyphoid B serum was instituted, but no improvement occurring, Emile-Weil changed to the mixed vaccine. After the 16th injection, the sinus still discharged an occasional drop of serum, so the patient was transferred back to the surgical service.	Cured after 6 operations, followed in turn by a full course of vaccine therapy and operation.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
				cinated. On admission examination revealed a sinus at the lower end of the right tibia and an enlargement of the internal malleolus. On probing, no sequestrum was felt. There was no tenderness on pressure. The Widal was positive.	and the patient was discharged from the hospital 2 months afterwards completely cured.		
25	Emile-Weil in Emile-Weil et Chevrier: La Presse médicale, Paris, 1917, xxv, 483; also in Chéron: Thèse Paris, 1921, obs. vii, p. 38.	36 M November, 1915.	Suppurative osteomyelitis. November 15, 1916. Right 4th and 5th costal cartilages. None made but direct examination of the pus showed a large bacillus and diplococci. No.	In February, 1916, during convalescence, the patient (L——— Eugene) exhibited a cold abscess of the right costal cartilages. Six weeks before the onset of the typhoid he had received two injections of antityphoid serum, viz., October 20, 1915. On admission, November 15, 1916, examination revealed a sinus leading down to the right 5th rib, from the mouth of which a yellowish, odorless pus was escaping. The area was not tender on palpation, nor was the margin of the vent inflamed. No sequestrum was felt. Direct examination of the pus showed numberless germs, a bacillus larger than the typhoid and cocci in the form of diplococci. The Widal was positive.	1st, March, 1916, curettement and drainage · 2nd, July, 1916, the wound did not close and a fistula formed; as the serum treatment proved unsuccessful a 3rd operation was performed in March, 1917. May 1, 1917, the patient noticed a tender spot in the right 4th rib, despite a further course of serotherapy a 4th operation had to be performed, September 6, 1917. The patient was discharged cured, December 5, 1917.	Vaccino-therapy was begun November 30, 1916. After 10 inoculations the tract no longer suppurated, but on the completion of the usual course of 16 doses, the wound still wept an occasional drop of serum, so the patient was transferred to the surgical service. Before the man was finally cured he had to undergo in turn an operation, a further course of vaccinotherapy and operation.	Cured by combined operative and serum treatment.
6	Emile-Weil in Emile-Weil et Chevrier: La Presse médicale,	36 M December, 1914.	Suppurative osteomyelitis. Towards the end of January, 1915. 8th rib.	The patient (B——— Auguste) noticed the appearance of a small lump in the region of the xiphoid appendix towards the end of January, 1915, together	1st, May, 1915, incision and drainage; 2nd, August, 1915, curettement and drainage; 3rd,	Six injections arrested the suppuration, the pus being replaced by a serous discharge, but the fistula did not close. After 16 doses	Cured after combined operative and sero-therapy.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
	Paris, 1917, xxv, 483; also in Chéron: Thèse Paris, 1921, obs. viii, p. 40.		Sterile. No.	with pain radiating along the 10th rib. In May, 1915, the mass increased in size, suppurated and was incised. In August and December of 1915, secondary operations were found necessary. In February, 1916, he was sent to the seashore to recuperate, but was soon hospitalized again under the diagnosis of suppurative tuberculous chondritis involving the xiphoid consecutive to a typhoid in December, 1914. He had never been vaccinated against typhoid fever. On admission there was over the left 8th rib a suppurative fistula discharging a yellow odorless pus. No sequestrum was felt. Culture of the pus remained sterile, nor were any organisms seen on examination of a smear. The Widal was positive in the dilution of 1/500; para. B, 1/100.	December, 1915, curettement. Despite the three interventions, there was much discharge and a deep fistula with many burrows. Serum therapy now inaugurated, but unsuccessfully. 4th operation, March 8, 1917, resection of orifice, small sequestrum removed, subcostal abscess, resection of costal cartilages and bone, without cure.	the fistula was still open but gave issue to serum only. The patient was therefore transferred for a further surgical intervention. Then followed in April, 1917, a new series of injections which led to cicatrization of the wound. The patient was discharged as cured, in September, 1917.	
27	Emile-Weil in Chéron: Thèse Paris, 1921, obs. ix, p. 42.	41 M August, 1915.	Suppurative osteomyelitis. December, 1915. Left 5th rib. Not made. No.	D——— Louis was admitted, December 30, 1916. In December, 1915, consecutive to a typhoid in August of the same year, he felt pain in the area of the 5th rib and noticed a small lump which grew slowly but steadily. Had been vaccinated in May, 1915, two months before the onset of the typhoid. Before admission had undergone two operations, which were followed by a permanent fistula. On admission, examination revealed in the left side of the thorax a fistula with two openings, from	1st, March, 1916, incision of abscess as large as a nut. 2nd, June, 1916, resection of left 5th rib, followed by a suppurating fistula. Though vaccino-therapy was instituted, a 3rd operation had to be performed, February 15, 1917. Discharged as cured, May 15, 1917.	After 8 injections of antityphoid serum, one opening had closed. On February 6, 1917, he had received the full course of 16 injections, but the fistula still persisted, so he was transferred to the surgical service.	Cured by combined sero-therapy and operative interference.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
				which escaped a yellow, odorless pus. No sequestrum was found. Microscopic examination of the pus disclosed cocci and bacilli, the latter were not typhoid. The Widal was positive, in the dilution of 1/100.			
28	Emile-Weil in Emile-Weil et Chevrier: La Presse médicale, Paris, 1917, xxv, 483; also in Chéron: Thèse Paris, 1921, obs. x, p. 43.	27 M 1914, severe.	Suppurative osteitis. Fall before the typhoid caused a hematoma, which was lanced, but failed to heal, typhoid contracted while still in the hospital. Great trochanter, right femur. Culture sterile. Fall.	M——— Eugene was admitted January 1, 1917. In November, 1914, the patient felt a pain in the trochanteric region at the site of the scar caused by an abscess following an injury. He had never been vaccinated against typhoid. On admission the man complained of pain in the right lower extremity. Examination revealed a suppurating fistula at the upper part of the thigh. Microscopical studies of the pus showed a small number of diplocci. Widal was positive in the dilution of 1/500.	Before vaccine treatment was instituted 4 unsuccessful operations were performed, leaving as a relic a fistula 12 cm. long and one operation after the completion of the sero-therapy. 1st, November, 1914, incision ,suppurative fistula ensued; 2nd, March, 1915, drainage; 3rd, March, 1916, debridement; 4th, August, 1916, debridement and curettement of foyer of pus in femur below great trochanter, but the wound continued to discharge; 5th, March, 1917, wound then closed permanently and the man was discharged as cured, in July, 1917.	Vaccino-therapy was begun January 5, 1917. With the administration of the 16th injection, the wound was closed. The good result persisted until March, then a point of softening appeared and the wound reopened, necessitating the transferal of the patient to the surgical service.	Cured by combined surgical and serum treatment.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
29	Emile-Weil in Emile-Weil et Chevrier: La Presse médicale, Paris, 1917, xxv, 483; also in Chéron: Thèse Paris, 1921, obs. xi, p. 45.	31 M November 5, 1914.	Suppurative osteomyelitis. December, 1914. Lower end of right tibia and fibula. None made. No.	In December, 1914, the patient (D) had felt violent pain in his left leg. He had received 4 injections of antityphoid serum in 1915, after his attack of typhoid. On admission, examination revealed a roughened and enlarged fibula. The overlying skin was not adherent. There was no pain on palpation. The tibia above the malleolus was enlarged. The bone was tender on touch, but not painful. The skin was not adherent. At a point 10 cm. higher there was another focus of enlargement in the tibia. Here the bone was hard and painful on palpation, the skin was adherent and there was a spot of softening. The Widal was positive in the dilution of 1/1000; the para. B, 1/100. X-ray showed 2 points of osteitis in the tibia before operation, after 10 injections of serum the X-ray disclosed reparative processes in progress.	Five operations before the use of serum. 1st, December 15, 1914, incision of abscess at the lower end of the tibia with escape of pus; 2nd, March, 1915, incision and curettement of the internal and external malleoli; 3rd, April, 1915, but fistula persisted; 4th, operation, July, 1916, curettage and drainage, followed a few days later by the lancing of a superficial retromalleolar abscess.	Vaccine-therapy caused a prompt recession in the process. After the 16th injection the patient left the hospital, cured.	Combined surgical and serum therapy effected a cure.
30	Emile-Weil: Bull. Acad. de méd., Paris, 1917, 3. s., lxxvii, 109; also in Emile-Weil et Chevrier: La Presse médicale, Paris, 1917, 1917, xxv, 481;	30 M December, 1915.	Suppurative osteomyelitis. End of January, 1916. Right 5th rib. Culture of pus showed paratyphoid B. No.	(A) began to suffer in the rib, end of January, 1916. In February a small lump appeared. This patient had been vaccinated in January, 1915, with 4 injections of typhoid serum. Admitted, November 15, 1916. Widal positive. Had undergone 3 unsatisfactory operations.	1st, March 8, 1916, incision; 2nd, April 18, 1916, resection of costal cartilage; 3rd, July, 1916, curettage and removal of sequestrum.	Notwithstanding the 3 operations when examined November 21, 1916, the wound was abundantly discharging a yellowish, odorless pus. Vaccino-therapy was begun on December 1, 1916. After the second injection there was no further weeping from the sinus. However, the treatment was continued despite the cure. The tract	Cured.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
	also in Chéron: Thèse Paris, 1921, obs. xii, p. 47.					completely closed after the 4th inoculation. The duration of the treatment was 15 days. At the end of May there was a slight suppuration lasting 3 days. The patient was discharged cured, June 5, 1916.	
31	Emile-Weil: Bull. Acad. de méd., Paris, 1917, 3. s., lxxvii, 109; also in Emile-Weil et Chevrier: La Presse médicale, Paris, 1917, xxv, 483; also in Chéron: Thèse Paris, 1921, obs. xiii, p. 48.	39 M October, 1915, severe.	Suppurative osteomyelitis. End of December, 1914. Left 6th rib. Diagnosis made by the recovery of the typhoid bacillus from the fistula. No.	Commenced to suffer pain in his rib at the end of December, 1914, but the swelling did not make its appearance until January, 1915. This man (J) had never been vaccinated against typhoid fever. Admitted November 15, 1916. On entrance, there was a suppurating fistula of 2 months' duration on the left side and the front of his chest. It was not sore on palpation. Widal positive in the dilution of 1/250; para. B, 1/50.	1st, March, 1915, incision; 2nd, September, 1915, incision; 3rd, January, 1916, incision; 4th, August, 1916, curettage; 5th, 1917, ablation of cartilage.	Notwithstanding 10 injections of antityphoid serum the suppuration continued. This treatment was begun on December 4, 1916. The patient was therefore transferred to the surgical service and the 5th operation undertaken. Discharged cured, March 8, 1917. Six months later the cure had maintained itself.	Cured by combined serotherapy and operation.
32	Emile-Weil in Chéron: Thèse Paris, 1921, obs. xiv, p. 50.	24 M October, 1914.	Suppurative osteomyelitis. November, 1914. Right femur. None made. No.	M—— Maurice was admitted June 10, 1917. In November, 1914, he felt some pain in his right groin. In January, 1915, he commenced to walk lame. In March, 1915, a swelling appeared in the groin and right knee. In July, 1915, a diagnosis was made of a periostitis at the upper part of the right femur and an operation undertaken for its relief, followed in due order by 2 more interventions without success. He had never been	1st, July, 1915, incision of large abscess, no communication with the joint, drainage, by the end of the month 2 fistula were in existence; 2nd, October, 1915; 3rd, February, 1916, curettement with drainage.	July 4, 1917, began vaccinotherapy. After 7 inoculations the patient refused further treatment.	Notable amelioration.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
				vaccinated against typhoid. On admission examination revealed a fistulous opening in front of the right groin and an enlargement at the lower third of the femur. There was no pain on palpation. The Wassermann test was negative, the Widal positive. An X-ray examination disclosed a thickening of the femur. Diagnosed osteitis typhosus.			
33	Vincent: Bull. d. l'Acad. de Méd., Paris, 1922, 3. s. lxxxvii, 517; also in Salmont: Thèse Paris, 1918, obs. liv, p. 57, and in Chéron: Thèse Paris, 1921, obs. xv, p. 53.	18 F 1912 or September, 1918.	Suppurative osteoperiostis. November, 1918. Right fibula, right ulna, left scapula; osteoperiostitis. December 20, 1918. Sacro - lumbar spine. Not mentioned. Not mentioned.	This patient was seen in consultation with Ungauer. She had had in 1912, a typhoid, lasting 30 days, of moderate severity. In September, 1918, she came under the care of Ungauer for a fever of obscure nature, but believed to be either typhoid or paratyphoid. The fever did not break until November 8 or 9, but the period of apyrexia was of short duration. There then appeared in rapid succession numerous abscesses in the buttocks and supra-pubic region, and foci of suppurative osteoperiostitis in the fibula, ulna and scapula, with swelling of the knee and elbow joints. All these lesions had resolved in a month, but after a remission of three weeks, bruskly on December 20, the fever returned, accompanied by violent pain in the sacro-lumbar region which radiated into the abdomen and thighs. Her suffering was intense. The least movement called forth cries. The right thigh was	No	Vincent suggested the use of serum therapy, but this was not accepted until March 2, 1919, by which time the patient had been bedridden five months. She began to improve immediately and was well on the road to recovery when the 4th injection was made, the others having been administered on March 5 and 8, respectively, all told about 2,000,000,000 dead paratyphoid type B bacilli were injected along with a concurrent immunization against the typhoid infection.	Cured.

No.	Reporter Reference	Age Sex Typhoid	Lesion Onset Bone Culture Trauma	Symptoms	Operation Date Result	Vaccino-therapy	Progress
				flexed on the abdomen. She was in a deplorable condition. It was at this time that she was first seen by Vincent, who diagnosed a multiple osteoperiostit.s involving the sacro-lumbar spine and the iliac bones, of either typhoidal or paratyphoidal origin, which impression was sustained by the blood of the patient agglutinating promptly the bacillus paratyphoideus type B laboratory strain.			
112	allan & Squires Amer. Jl. Med. Sc., Phila., 1916 clvi, 11	20 + June 1916	Osteo-periostitis lumbar spine Nov. 1, 1916.	Adm. Dec 5, 1916, with pain in left flank & hip, began Nov. 1, as catch in hip on walking rapidly, worse, in bed past month. Temp. 99 to 100. Ed., limited motion lower spine, cannot bend forward,		Back shrouded with adhesive & the usual immunizing dose of Coincident dried typh. vaccine given. Dec 10. 2nd dose Dec 14. 3rd dose Dec. 19. after 2nd dose was allowed to go home. Feb 16, 1917, back up walking 5% disability.	Cured by the typh. process was subsiding. is hard to determine the value of the typh. vac. in this case. However the limp returned normal after the 1st dose & there was marked decrease of pain after

Lesions often articular (N.Y.)

overstretched vertebral column & inclined to left, left lumbar muscles elastic, limbs on pressure,

My interest in typhoidal osteomyelitis was aroused by the occurrence in rapid succession of three cases in the surgical services at the University of Maryland (see Annals of Surgery, 1923, lxxxiii, 504); all of which were promptly cured by operation. The unusual coincidence of these cases prompted me to make an exhaustive review of the literature. While engaged in this study, I was forcibly and favorably impressed with the marvelous cures obtained in a limited number of the posttyphoidal bone dyscrasias by vaccino-therapy. Unfortunately, as yet, too few instances of its use are on record from which to draw absolute conclusions, but its employment has been sufficiently extensive to warrant favorable comment, as the accompanying table graphically testifies. However, in arriving at an estimate of the probable value of sero-therapy in typhoidal bone lesions, due recognition must be accorded the known tendency of these complications to undergo spontaneous resolution. On the other hand, the literature is full of cases that have been operated upon a number of times before a cure has been obtained. It is in these stubborn cases, whether plastic or suppurative, that vaccino-therapy has been found most helpful in cutting short the period of disability. Emile-Weil is firmly convinced that the antityphoid serum is almost invariably successful in the plastic type of posttyphoid osteitis. His experience, as well as that of Dachtler, of Dufour and of others, would seem to confirm this contention. On the contrary, it is not so good in the suppurative type. Here it is ordinarily insufficient unless aided by surgery. While the methods employed by its users have differed somewhat in detail, the technic of its administration has been more or less along the same general line. In the non-suppurative type Emile-Weil injects a stock vaccine at the rate of two inoculations weekly. The treatment must be continued even after the swelling has disappeared. He practises 16 injections in the space of 8 weeks; the first 4 in progressive doses, ¼, ½, ¾, and 1 c. c., respectively; the 4 following of 1 c. c.; and the last 8 of 1½ to 2 c. c. In doubtfful cases and in the absence of a laboratory diagnosis recourse is had to the mixed typhoid and paratyphoid vaccines. Often operation suffices to cure suppurative typhoidal osteitis, sometimes fails, and on other occasions apparent cures sometimes relapse. The same technic as described above has cured closed and open suppurative posttyphoidal bone disease, without operation, but only rarely. Generally speaking, in the presence of pus, sero-therapy is not satisfactory unless combined with operation when it leads to a complete cure with a rapidity and surity not possessed by operation alone. With this technic Emile-Weil has obtained a cure in all of his cases, even in

those which have undergone many operations and recurrences. When confronted by an abscess, Emile-Weil prefers to split the serum treatment and has adopted the following routine: He makes four preliminary, progressive inoculations as in the dry type, then operates, after which he reinstitutes the vaccino-therapy. The first 8 or 10 injections are given twice weekly, when the interval between treatments is lengthened to a week.

Owing to the tardiness with which posttyphoidal osteitis develops, it has been suggested that a prophylactic course of vaccino-therapy may be instituted with profit in those convalescents from typhoid fever attacked by ostalgia. In any event, it is most necessary to know the germ at fault, for the false or non-Eberthian osteitis occurring at the end of a typhoid is not amenable to the specific antityphoid vaccine. A positive culture from the pus amply identifies the offending organism, but in the non-suppurative type a correct diagnosis must rest on the agglutination test as the germs are out of the blood stream. By these measures Emile-Weil was able to recognize 14 cases of true posttyphoidal osteoperiostitis and to guard against diagnostic errors in 4 posttyphoidal, banal osteopathies, viz., observations 18, 19, 20 and 21 in Chéron, Thèse Paris, 1921.

In observation xviii, he checked his diagnosis by serotherapy. The patient, D——, male, aged 28, was admitted February 13, 1917, for a tuberculosis osteitis which had been taken for a posttyphoidal osteomyelitis, consecutive to an enteric fever in January, 1915. In February, 1915, the patient felt pain in the left thoracic region in the vicinity of the 5th rib, associated with the appearance of a small lump, the size of an egg. During two years he lay in a hospital where he underwent diverse treatment for a posttyphoidal chondritis. On admission there was a hard tumor seated on the left 5th rib. It was not adherent to the skin; had no point of softness and was not sore on pressure. The patient had a dry cough. He had never been vaccinated against typhoid. The serum reaction showed a slight clumping of the paratyphoid B bacillus, but none of the typhoid or of the paratyphoid A. He administered the mixed vaccines, with no improvement; the mass persisted and the man's general health declined. The diagnosis of tuberculous osteitis was controlled by radiography. Clinically, the right apex was dull, and other signs of consolidation present. Case xxi was a tuberculous osteitis of the ulna consecutive to a typhoid in November, 1916. He learned that the man had had wrist trouble at the age of 18 when he had had pain in the left wrist associated with swelling. It had been punctured, after

which it suppurated for two years, then cicatrized, but from time to time an abscess formed and broke. More difficult to diagnose is the exceptional case, such as the one reported by Romero, in which the bony complication occurred not at the end of a typhoid but after an injury. This man had had a febrile icterus some years before and had more recently nursed a number of typhoid victims, but had not contracted the disease himself. The paratyphoid B bacillus was obtained from a culture of the pus.

Sicard has reported 7 cases of posttyphoidal bone disease in which vaccino-therapy has produced cures; 2 times vaccination alone was sufficient; 5 times associated surgery had to be employed. He utilized diverse vaccines, either the pure typhoid or the mixed. This he injected once daily in the amount of ½ to ¾ c. c., repeated 12 to 18 times. In the suppurative type, like Emile-Weil, Sicard preferred to interrupt the sero-therapy, giving 3 injections prior to and 10 or more after the operation. Dufour practised vaccino-therapy in 4 cases of spondylitis, with success. He employed the stock vaccines and generally gave 5 injections, the first ½ c. c.; four days later 1 c. c.; followed in nine days by 1½ c. c., and two times 2 c. c. at ten day intervals. In this connection, it is well to bear in mind that the dose of serum sufficient for the non-suppurative typhoidal osteitis will not answer for the suppurative type. It is too small and frequently too seldom repeated to exert a beneficial action.

From a critical review of the material in hand, it would appear that in vaccino-therapy physicians have a potent weapon with which to combat the osseous ravages of typhoid that have proven rebellious to other methods of attack, as the 33 cases in the table bear eloquent testimony. In the plastic type it almost invariably leads quickly to a cure. In the presence of pus, it hasn't proven so satisfactory by itself, but when combined with appropriate surgery, it accomplishes a cure with a rapidity and a surety not possessed by operation alone.

Inasmuch as the employment of vaccines has not been generally adopted in the treatment of the posttyphoidal osseous disorders, nor its value appreciated, I have thought a presentation of its merits as quite worthwhile.

In conclusion I wish to call attention to the fact that the pus in case vi of the table, reported by Romero, and in the case xxx (recorded by Emile-Weil, grew in pure culture the B. paratyphosus B. Unfortunately, in an article on "Paratyphoid Osteomyelitis," contributed to this Bulletin, 1924, viii, 164, I was unable at that time to furnish the details of

these cases, merely mentioning their occurrence. Emile-Weil says that he had treated another case of paratyphoid B bone infection, but made the diagnosis by the agglutination test (Le Monde Médical, Paris, 1922, xxxii, 171). He was doubtful, however, whether it should be assigned to this organism. The three above mentioned cases were treated with vaccines, and cured. In this connection I should like to supply the history of Eschbach's case of paratyphoid B suppurative osteomyelitis, though not treated with serotherapy, so as to make available all of the cases of paratyphoid osteoperiostitis that have been reported to date, viz., Cushing, Fischer, Buchholz, Bushnell, Jensen and Koch, Rissler in Reenstjerna, Spassokukozky, Moreau, Romero, Emile-Weil, Carrington and Davison, Ceccarelli and Eschbach, one each or a total of 13. Eschbach's observation was published in the Bull. et mém. d. l. Soc. méd. d. hôp. d., Paris, 1917, 3. s., xli, 1089, and was cited also by Chéron, Thèse Paris, 1921, p. 55. The patient, a male, soldier, aged 24, had had a benign attack of typhoid in October, 1924. A hemoculture was negative, but the sero-diagnosis was positive to the B. Paratyphosus B. The bone disease manifested itself first in December, 1914, by pain situated in the region of the left lower costal cartilages at their junction with the corresponding ribs, tumefaction, fluctuation and redness then appeared, but the temperature remained normal, except on one occasion, when it rose to 39 degrees C. The abscess when incised yielded a few drops of pus which on culture disclosed a bacillus with the characteristic of the typhoid group. It was not agglutinated by the specific serum of typhoid or of the paratyphoid A, but was by the paratyphoid B in the titre of 1 to 5000. The cure was rapid.

As this article goes to press, I have become acquainted with Carrington & Davison's observations, which is published in the Johns Hopkins Hospital Bulletin, 1925, xxxvi, 428.

The patient, a colored boy, age 8, was admitted to the hospital, February 14, 1921, for a swollen and tender right elbow. The date of onset of his illness was uncertain. For several months he had been feverish and short of breath; he had vomited frequently; had had pain in his abdomen, head and back, attacks of epistaxis and occasionally swollen and painful legs and joints. About 6 weeks before admission these symptoms had increased in severity. On admission the temperature was 100 degrees F., but in 7 hours had risen to 106; pulse, 124; respirations, 48. The right elbow and lower end of right humerus was slightly swollen and tender. Wassermann test was negative; the red blood cells

numbered 3,064,000; many of the cells were nucleated; there was some aniso-poikilocytosis; the platelets were apparently increased; hemoglobin, 36; white blood cells, 19,800; polymorphonuclears, 80; large mononuclears, 12½; small mononuclears, 6½; the tuberculin test was negative with 0.1 mgm., positive with 1.0 mgm. On X-ray examination the right humerus appeared normal. An examination of a preparation of a fresh blood smear showed two actively motile bacilli. On blood culture these were proven to be the B. paratyphosus B. By March 12, 1921, the swelling at the lower end of the right humerus had increased in size, was soft and fluctuated slightly. In addition, some two inches below the right elbow on the flexor surface there was a diffuse, somewhat softish swelling which appeared to be connected with the bones of the forearm. The upper one was aspirated and a small amount of fluid obtained, from which the B. Paratyphoideus B was isolated on culture. An X-ray examination now showed an osteitis and a periostitis of the right humerus, radius and ulna. March 23rd, the B. paratyphoideus B was recovered from the stool. This date, the swellings fluctuated definitely, so were incised. Again the B. paratyphosus B was isolated from the pus on culture. The bone was not disturbed. April 7th, a sequestrum two inches in length was removed from the humerus. April 11th, swelling and tenderness appeared at the upper third of both fibulae and of the left ulna. An X-ray examination revealed an osteomyelitis in all three places. These were incised and drained. Here again the B. paratyphosus B was recovered from the pus. April 28th, the right elbow was reopened and sequestra removed from the radius and ulna. The resulting wound was irrigated with Dakin's solution. May 4th, an X-ray examination disclosed an osteitis of the left scapula and of all the ribs on both sides from the 3rd to the 9th, inclusive. The boy was discharged July 23, 1921. apparently cured. He however died February 16, 1923, of peritonitis, according to the Health Department records, but no post-mortem having been held, the origin of the trouble could not be certified. The case was reported for two reasons: first, because of the unusual microscopic observation of motile bacilli in fresh blood preparations, and, second, because of the rarity of such extensive osteomyelitis and periostitis due to the B. paratyphosus B. The right humerus, radius and ulna, both filulas, the left ulna and scapula, and the 3rd to the 9th ribs on both sides were successively implicated at intervals during a period of two months. And finally a case of paratyphoid osteitis, reported by Ceccarelli in the Archivo Ital. di Chir, Bologna, 1925, xi. 395, and abstracted in the Jour. Amer. Med. Assn., 1925, lxxxv, 781. It was a case of

subcute osteitis of the femur. The assumed coxitis developed suddenly in the boy after the family had passed through a brief febrile disease diagnosed as influenza. Exploratory puncture in the circumscribed bone focus, near the trochanter, disclosed virulent paratyphoid B. bacilli. Ceccarelli aspirated 20 c. c. of blood-stained pus and the process promptly retrogressed and healed. The femur seemed to be quite normal eight months later. Light traction had been applied to the thigh after the evacuation of the abscess.

BOOK REVIEWS

Bone Sarcoma. By E. A. Codman, M. D., Boston, Mass. With 24 Illustrations. New York: Paul H. Hoeber. Cloth, $2.00 net. 1925.

This book has been written for the purpose of inducing the Roentgenologist, the pathologist and the surgeon to employ a uniform system of nomenclature. Until some such plan is followed, those interested in the solution of the baffling phases of bone sarcoma feel that progress will be hampered. Codman proposes the following classification:

1. Metastatic tumors of the bone.
2. Periosteal fibrosarcoma.
3. Osteogenic tumors, bening and malignant.
4. Inflammatory conditions.
5. Benign giant cell tumor.
6. Ewing's tumor.
7. Angioma, benign and malignant.
8. Myeloma.

These are definite clinical entities which he hopes to establish as the essential divisions of bone tumors. He wants to be able to say that a patient with a bone tumor must have one of these eight conditions. This implies that no others are known which are not subdivisions of these classes. The question is much more important in which of these general classes a tumor belongs than it is in what particular subdivision of that class.

For quite a number of years Codman has been endeavoring to obtain the co-operation of the profession in this most important subject by requesting all of our members to place on record their cases of bone sarcoma in the registry of bone sarcoma of the American College of Surgeons. He fully realizes that the experience of any one man or any one clinic is very limited, and a secondary object of this book is to arouse the interest of surgeons to the importance of lending their aid by promptly placing all such cases which come under their care on the register.

Clinical Features of Heart Disease. An Interpretation of the Mechanics of Diagnosis for Practitioners. By Leroy Crummer, M. D., Professor of Medicine, University of Nebraska. With an Introduction by Emanual Libman, M. D., Physician to Mt. Sinai Hospial; Professor of Clinical Medicine, Columbia University, New York, 1925. Cloth, $3.00 net. New York: Paul B. Hoeber, Inc.

This book is a clinical study based upon bedside observation. It contains a mass of facts and suggestions which will be found useful

to the teacher, but especially to the student and general practitioner. It teaches that much can be learnt about the heart by a proper examination, especially when taken in conjunction with a careful history. During the past decade or so, the attention of the student was directed toward mechanical aids in arriving at diagnosis rather than by impressing upon his mind the importance of careful clinical investigation. The laboratory aids are all right in their place, which is as corroborators, and today, as heretofore, the great majority of cases must be diagnosed by a proper interpretation and correlation of the history in association with the clinical findings. In the book before us Crummer has sensed the trend of the times and has produced a work which will be found helpful to those without the services of complex mechanical armamentariums. He states overvaluation of mechanical aids in diagnosis is a general defect of medical thought. Each new instrument or method is greeted as a great advance by many who fail to understand the fundamental difficulties in the use of the new procedure. In the newer chemical field, where so much depends upon color comparison, self correction in color perception is a thing unknown. Many a laboratory expert is making and having accepted reports based on color comparison where the natural error is multiplied many fold in the final figures, but this same expert could not be trusted to match a piece of ribbon.

Medical and Surgical Report of the Roosevelt Hospital, New York, 2nd Series, 1925, Based on the Work of the Years 1915-1924, Inclusive. 1925. Cloth, $5.00 net. New York: Paul B. Hoeber, Inc.

In addition to papers contributed by the staff to medical journals, this report contains a number of articles specially written for its pages, such as: The Diagnosis and Treatment of Pyelitis in Infancy and Childhood, by Rowland G. Freeman; A Case of Cerebellar Abscess with Operation and Recovery, by Alexander T. Martin, Charles A. McKendree and Hampton P. Howell; Extrauterine Pregnancy, by Grant P. Pennoyer; Tuberculous Dactylitis, by Edward S. Rimer; and Methods and Results of the Treatment of Fracture of the Femoral Shaft, by Alfred Stilman. Reprinted articles have been contributed by: Charles N. Dowd, Technique of Partial Colectomy by the Mikulicz Two-Stage Method; The Advantages of the Mikulicz Two-Stage Operation of Partial Colectomy; The Relationship Between Certain Forms of Intestinal Obstruction, Chronic Peritonitis and Chronic Multiple Serositis; Rolfe Floyd, Non-Protein Nitrogen and Blood Pressure in Relation to Kidney and Heart Lesions, Organizations of Pneumonic Exudates, Two Classifications of Bright's Disease; William P. Healy, Recovery After Postoperative Tetany Treated With Calcium Lactate, Report of a Case of Intractable Vulvar Ulcer (Estiomene) Cured By Proteus Vaccines; W. W. Herrick, Hypertension and Hyperglycemia; W. G. Lyle and H. Sharlit, Influences of Extrarenal Factors on the Renal Functional Test Meal; C. H. Peck, Tuberculous Cyst of the Spleen; Splenectomy; Recovery, etc.

All the articles in the volume are of the highest order of merit. It would be difficult to specially single out any one as more meritorious than its fellows. There are papers here which will appeal to the internest, and others which will be attractive to the surgeon. The committee having the arrangement and selection of the papers is to be congratulated upon the high order of their selections. All are useful to the practising physician. The volume is a credit to all concerned in its production.

DEATHS

Dr. Henry R. Carter, Assistant Surgeon General, United States Public Health Service, class of 1879; aged 73; died September 14, 1925, following a long illness. Dr. Carter was a native of Virginia. He attended the University of Virginia for three years, and studied medicine at the University of Maryland, graduating with the degree of Doctor of Medicine in 1879. He entered the United States Marine Hospital Service the same year, in which he served until the time of

Dr. Henry R. Carter

his death, mainly in sanitary work, especially in connection with yellow fever. On June 1, 1910, his Alma Mater bestowed on him the degree of Doctor of Laws. Dr. Carter was one of our most distinguished alumni. Whilst the discovery of the method of transmission of yellow fever was discovered by the immortals, Reed, Lazear and Carroll, the last a graduate of the University of Maryland, Carter by his investigations paved the way of this commission to their discovery. Dr. Carter was of a very modest and retiring disposition. It is said

that he was offered the Surgeon Generalship of the U. S. P. H. S., but that he declined the proffered honor. He was in addition a highly cultured and educated gentleman. The United States has lost a most valuable servant, the people of this commonwealth a zealous guardian of their health, and the University of Maryland one of its most illustrious sons.

Dr. William R. Lowman, Orangeburg, South Carolina; P. & S., class of 1888; aged 58; died, July 15, 1925, following a long illness.

Dr. Millard Fillmore Fox, Guilford College, North Carolina; P. & S., class of 1881; aged 72; died, August 15, 1925.

Dr. Frank Camden Willard, Baltimore, Maryland; B. M. C., class of 1904; aged 45; died, August 9, 1925, of pneumonia.

Dr. William Henry White, Whiton, Indiana; class of 1887; died, July 18, 1925, following a long illness; aged 62.

Dr. John Wesley Hoover, Sapulpa, Oklahoma; P. & S., class of 1892; aged 62; died, July 26, 1925, of heart disease.

Dr. Walter Roland Elliott, West Collingswood, New Jersey; P. & S., class of 1903; aged 55; died, August 8, 1925, of angina pectoris.

Dr. Smith Graves Beatty, Kane, Pennsylvania; P. & S., class of 1882; aged 71; died, May 29, 1925, of heart disease.

Dr. Albert William Quattlebaum, Statesboro, Georgia; P. & S., class of 1889; aged 62; died, July 8, 1925.

Dr. John A. Grier, Sisterville, West Virginia; P. & S., class of 1894; aged 55; died, August 27, 1925, following an appendectomy.

Dr. Robert Lee Patton, Telford, Tennessee; P. & S., class of 1889; aged 62; died, August 17, 1925, of tuberculosis.

Dr. Delbert B. Hartinger, Middleport, Ohio; P. & S., class of 1894; Spanish-American War veteran; aged 53; died, September 1, 1925, of a bullet wound.

Dr. George A. Hartman, Baltimore, Maryland; Washington University School of Medicine, class of 1872; aged 74; died, September 2, 1925, of heart disease.

Dr. J. Hulbert Milligan, Morristown, Tennessee; class of 1890; served in the M. C., U. S. Army, during the World War; aged 60; died, May 22, 1825, of chronic nephritis.

Dr. Richard Thomas Hardy, Baltimore, Maryland; P. & S., class of 1893; formerly superintendent of Sydenham Hospital, Baltimore; aged 70; died, June 6, 1925, of heart disease.

Dr. John Noland MacKenzie, Baltimore, Maryland; U. of Va., Department of Medicine, Charlottesville, class of 1876; Medical Department of the University of the City of New York, class of 1877; clinical professor of the diseases of the nose and throat, University of Maryland, School of Medicine, 1887-1897; and the Johns Hopkins University Medical Department, 1889-1912; aged 71; died, May 21, 1925, following a long illness.

Dr. John Shirley, Clarion, Pennsylvania; P. & S., class of 1883; aged 68; died, June 15, 1925, of nephritis. After practicing medicine a while, he forsook it for the study of law, and was admitted to the Clarion County Bar in 1893.

Dr. Henry M. Thomas, Baltimore, Maryland; class of 1885; clinical professor of neurology, Johns Hopkins University Medical Department; neurologist to the Johns Hopkins Hospital, 1894-1925; aged 64; died, June 21, 1925, of heart disease. He was the son of Dr. James Carey Thomas, class of 1854; and a grandson of Dr. Richard Henry Thomas, professor of Obstetrics and Medical Jurisprudence, University of Maryland, 1847-1858. A son, Dr. Henry M. Thomas, Jr., a graduate of the Johns Hopkins University Medical Department, is one of the most prominent of the younger medical set of Baltimore. Thus this family has supplied four generations of physicians without interruption, all or whom have occupied positions of trust and responsibility. It is a record well to be proud of.

Dr. William Watson Pharr, Charlotte, North Carolina; P. & S., class of 1882; aged 69; died, July 4, 1925.

Dr. Bernard Henry Lovely, Welch, West Virginia; class of 1916; served in the M. C., U. S. Army, during the World War; aged 33; died suddenly, in June, 1925.

Dr. George French Owens, Chaptico, Maryland; class of 1896; aged 52; died, May 17, 1925.

Dr. Arthur Bascom Croom, Maxton, North Carolina; class of 1905; aged 45; died, June 15, 1925.

Dr. Brontz Luther Beers, Salmon, Idaho; P. & S., class of 1880; aged 69; died in June, 1925, of aortic insufficiency.

Dr. Vernon Dayton Holbrook, Peoria, Illinois; B. M. C., class of 1902; aged 49; died, April 17, 1925, of streptococcic sore throat and bronchopneumonia.

Dr. David Davis King, Greensboro, North Carolina; class of 1904; aged 40; died, April 21, 1925, of a self-inflicted wound.

Dr. John Calvin Cort, Clairton, Pennsylvania; class of 1885; aged 65; died, April 28, 1925, of valvular heart disease.

Dr. Daniel Webster Cathell, Baltimore, Maryland; a non-graduate, U. of M., of 1 year's attendance and M. D., Long Island College Hospital, class of 1865; aged 86; died, May 1, 1925. He was the author of the book called the "Physician Himself" which is now in the 16th edition.

Dr. John Diedrich Moritz, Charlottesville, Virginia; class of 1904; aged 50; died, April 23, 1925, of septicemia and heart disease.

Dr. George D. Williams, Gatesville, North Carolina; P. & S., class of 1897; aged 50; died, April 12, 1925, of pneumonia.

Dr. Ellis Micheau, Baltimore, Maryland; P. & S., class of 1875; aged 64; died, February 15, 1925, of heart disease and nephritis.

Dr. Will Huntington Woodworth, Philadelphia, Pennsylvania; P. & S., class of 1890; aged 59; died, May 5, 1925, of heart disease.

Dr. Elias M. Wilkinson, Clinchfield, Virginia; class of 1888; aged 63; died, April 10, 1925.

Dr. James Fulton Williams, Charlottesville, Virginia; class of 1899; aged 52; died, May 1, 1925, following a long illness.

Dr. Lemuel H. Collins, Powellville, Maryland; Washington University School of Medicine, class of 1873; aged 78; died, April 21, 1925, of heart disease.

Dr. Harvey V. Varner, Clarksburg, West Virginia; B. M. C., class of 1903; aged 52; died, March 18, 1925.

Dr. Lewis Greene Woodson, Birmingham, Alabama; class of 1887; formerly professor of diseases of the eye, ear, nose and throat, Birmingham Medical College; aged 72; died, May 23, 1925.

Dr. William H. Brooks, Lieutenant Colonel, United States Army, retired, Salt Lake City, Utah; B. M. C., class of 1889; entered the army as an assistant surgeon in 1901; retired from active service for physical disability in 1913; aged 56; died, May 21, 1925.

Dr. Charles P. Leitzell, Lena, Illinois; P. & S., class of 1882; aged 70; died, May 10, 1925, of heart disease.

Dr. Newton Ford Raines, Raines, Tennessee; P. & S., class of 1879; aged 67; died, May 7, 1925, of chronic nephritis.

Dr. Robert H. P. Ellis, Paterson, New Jersey; class of 1877; formerly professor of materia medica and therapeutics in the B. M. C.; aged 71; died, May 24, 1925.

Dr. Arthur Erastus Ledbetter, Greensboro, North Carolina; class of 1888; aged 65; died, June 2, 1925.

Dr. Edward Francis O'Malley, Fitchburg, Massachusetts; B. M. C., class of 1904; aged 45; died, May 11, 1925, of pneumonia.

Dr. Arminius Cleveland Pole, Baltimore, Maryland; class of 1876; aged 73; died, March 31, 1925. For 29 years Dr. Pole was professor of anatomy in the Baltimore Medical College and from 1913-1916 held the same chair at the University of Maryland.

Dr. John Edward Duffy, Ridgefield Park, New Jersey; B. M. C., class of 1905; served in the M. C., U. S. Army during the World War; aged 44; died, March 6, 1925, of pneumonia, following an appendectomy.

Dr. James R. Campbell, Newton, North Carolina; class of 1876; aged 75; died, March 2, 1925.

Dr. Aaron B. Miller, Syracuse, New York; class of 1882; professor of gynecology, Syracuse University College of Medicine; president of the New York State Board of Medical Examiners; aged 65; died, March 28, 1925, of heart disease.

Dr. Samuel Jayne Fort, La Plata, Maryland; formerly demonstrator, lecturer and professor of materia medica and pharmacology in the College of Physicians and Surgeons and from 1916 to 1919, professor of materia medica and pharmacology in the University of Maryland; at one time superintendent of the Font Hill Private Home School for Backward and Mentally Deficient Children, Ellicott City, Maryland; served during the World War; deputy State Health Officer for Charles, Calvert and St. Mary's counties; a graduate of the University of Pennsylvania, class of 1882; aged 65; died, March 26, 1925, of pneumonia.

Dr. Albertus Bentley Nichols, Oakland, California; P. & S., class of 1904; formerly a practitioner in Arizona and West Virginia; aged 45; died, in February, 1925.

Dr. John Weems Hawkins, Cockeysville, Maryland; class of 1865; aged 85; died, April 12, 1925.

Dr. George Emory Plaster, Berryville, Virginia; class of 1848; Civil War veteran; aged 98; died, March 5, 1925.

Mrs. Elizabeth Hindes, for more than a quarter of a century, matron of the University of Maryland Maternity Hospital, well-known and beloved by hundreds of ex-residents and ex-nurses of the University of Maryland, a most efficient and conscientious employe of the University of Maryland, a friend of the downfallen women, died, April 4, 1925, after a lingering illness.

Dr. Austin Wesley Cline, Endicott, New York; P. & S., class of 1901; aged 47; died, April 7, 1925, of heart disease.

Dr. John W. Phillips, Troy, Pennsylvania; B. M. C., class of 1896; aged 50; died, March 11, 1925, of chronic endocarditis.

Dr. William H. Hardison, Creswell, North Carolina; Washington University School of Medicine, class of 1870; aged 79; died, March 26, 1925.

Dr. Charles Edgar Busey, Lynchburg, Virginia; P. & S., class of 1878; aged 71; died, April 7, 1925.

Dr. Patrick Michael O'Reilly, Newark, New Jersey; B. M. C., class of 1902; died, April 4, 1925, of heart disease.

Dr. John M. Gentry, Stonyfork, Pennsylvania; P. & S., class of 1884; Confederate veteran, aged 82; died, April 13, 1925.

Dr. Harold W. Talbot, West Winfeld, New York; B. M. C., class of 1906; aged 44; died, April 4, 1925, following a long illness.

Dr. Robert Conrad Rind, Springfield, Ohio; class of 1897; Spanish-American and World War Veteran; aged 52; died, March 23, 1925, of heart disease.

Dr. Silas M. Stickley, Stephens City, Virginia; P. & S., class of 1879; aged 72; died, March 20, 1925.

Dr. John H. O'Donovan, Baltimore, Maryland; class of 1891; aged 57; died, April 20, 1925. During the session of 1893-1894, he was demonstrator of histology in the University of Maryland. He was an A. B., of the Johns Hopkins University, graduating with the class of 1888. He was a grandson of Dr. John H. O'Donovan, class of 1824, a son of Dr. Charles O'Donovan, class of 1853 and a brother of Dr. Charles O'Donovan, Jr., class of 1881, emeritus professor of clinical medicine and pediatrics, University of Maryland.

Dr. Robert Fawcett, Baltimore, Maryland; class of 1892; Spanish-American War veteran; aged 58; died, May 27, 1925, of cerebral hemorrhage. He was graduated from the State Normal School in 1888 and was largely instrumental in securing appropriations from the State that made possible the building of the new State Normal School at Towson. He was a son of Dr. Christopher Fawcett, class of 1864.

Dr. William Milton Lewis, Baltimore, Maryland; class of 1888; aged 65; died, June 4, 1925. He was at one time Associate Professor of Normal Histology and Clinical Microscopy, Woman's College, Baltimore.

Dr. Samuel Taylor Darling, Baltimore, Maryland; P. & S., class of 1903, was killed in an automobile accident, May 20, 1925, near Beirut, Syria. Dr. Darling was born in New Jersey, in 1872. He was appointed chief of laboratories of the Isthmian Canal Commission, Panama, Canal Zone, in 1906 and in 1913, accompanied General Gorgas on a sanitary mission to the Rand Mines and Rhodesia, South Africa. In 1915, he joined the staff of the International Health Board, and for the next 3 years was head of a commission that investigated the cause of anemia in Malaya, Java and Fiji. From 1918 to 1920 he was professor and director of laboratories of hygiene in the Medical School of Sao Paulo, Brazil and since 1920, director of a laboratory for research in malaria at Leesburg, Georgia. Dr. Darling was recently appointed corresponding member of the Malaria Commission of the League of Nations and while in that service the accident occurred that caused his death.

Dr. L. S. Clagett, Baltimore, Maryland; non-graduate, aged 81; died, May 16, 1925, of heart disease. He studied medicine first at the University of Maryland, then transferred to Long Island Medical College, where he graduated in 1869. He was the father-in-law of Dr. Harvey G. Beck, Baltimore; P. & S., 1896, professor of clinical medicine, University of Maryland.

Dr. Alfred C. Palmer, Urbana, Virginia; class of 1881; aged 68; died, May 29, 1925.

Dr. Hugh Wilson Sweeney, Monroe, La.; P. & S., class of 1908; aged 42; died, May 10, 1925, of heart disease.

Dr. Edmund Strudwick Ashe, Wadesboro, North Carolina; P. & S., class of 1885; aged 67; died, May 24, 1925.

EDITORIAL

"The Lord Loveth a Cheerful Giver."

The University Hospital is facing a serious situation in the present shortage of pupil nurses, owing to the fact that desirable housing accommodations to take care of the entire student body are not available. To relieve this situation, the Alumni Council of the University of Maryland is undertaking to raise among the Alumni and friends the amount of $30,000 to build a much needed addition to the present Nurses' Home, and thus provide for the constantly increasing demands that the Hospital places upon the training school.

To date, about one-half of the necessary amount is in hand, but we cannot start building until the entire $30,000 has been subscribed. The small amount of $10 from every

alumnus who has not contributed would complete the fund in short order. If you have not already done so, will you not send your check, payable to William P. Cole, Jr., Treasurer, so that the building of this addition may start at once? Use the pledge form, if you desire, that appears on the last page of this bulletin in sending your contribution. A list of contributors follows:

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As a first step in this plan, you are requested to contribute to that part of the program which must be carried out immediately. $30,000 is required to erect an addition to the present Nurses' Home in order to provide increased accommodations for the nurses. This permanent addition will do away with the necessity of wasting more money in rentals and structural alterations of a temporary nature in the tenement houses of the poorest type.

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UNIVERSITY OF MARYLAND

BULLETIN

OF THE

SCHOOL OF MEDICINE

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THE PAST AND PRESENT OF TRAINED NURSING*

WM. ROYAL STOKES, M. D.

Your Grace and Reverend Associates, Members of the Graduating Class, Ladies and Gentlemen:

I suppose the beautiful, yet perhaps hackneyed, lines of Sir Walter Scott from the death of Marmion have been quoted so frequently on occasions of this kind that it may seem wearisome to repeat them again. And yet, "a thing of beauty is a joy forever." This poetry also expresses so concisely and clearly the very kernel of truth in relation to the profession of the trained nurse, it sets forth so truly the eternal feminine of kindness and devoted care towards the afflicted and sick, that I shall make bold to again recite the well-known stanza:

> "O, Woman! in our hours of ease,
> Uncertain, coy, and hard to please,
> And variable as the shade
> By the light quivering aspen made;
> When pain and anguish wring the brow,
> A ministering angel thou!"

I am sure that the last two lines express the sentiments of every one present today in regard to Sisters of Mercy and trained nurses.

I once heard, however, part of these verses recited under rather amusing circumstances, and as they were completed in a most unusual manner, the lines from Alexander Pope on vice must first be brought to your remembrance, which I must hasten to add are in no way connected with the profession which we cordially wel-

* Read at the annual commencement of the nurses of the Mercy Hospital, Baltimore, Md., May 5, 1925.

come into practice at this commencement. The lines are as follows:

"Vice is a monster of so frightful mien,
As to be hated, needs but to be seen;
Yet seen too oft, familiar with her face,
We first endure, then pity, then embrace."

It happened back in those sad and sinful days that the Medical and Chirurgical Faculty held a banquet after their annual meeting, and the retiring President, a fine specimen of a courtly gentleman and splendid country doctor, was down for the inevitable toast of "Lovely Woman." When he started his speech he began to recite Scott's lines which I have just repeated, but at the end of the second line he suddenly halted. Again he started, but could get no further than before. One of our wits, the late Major Venable, happened to be the toastmaster. He solemnly arose and offered to complete the quotation if the doctor would again start the verse, so Dr. McBirney again began, and the joint poetry went as follows:

"O, Woman! in our hours of ease,
Uncertain, coy, and hard to please.
And seen too oft, familiar with her face,
We first endure, then pity, then embrace."

Evolution of Nursing

In order to understand the real nature of any subject it is necessary to be familiar with its past history, since the gradual development which it has undergone enables us to appreciate the present position which it occupies. I shall, therefore, give a brief description of the various phases through which trained nursing has developed in the past in order that you may more thoroughly understand the present high plane upon which the profession of nursing stands.

Even in pre-historic times, medicine and nursing were intimately associated, and the women usually attended to the duties of what might be considered as crude nursing. Such a nurse, if she can be so called, aided in the administration of food, and attended to the toher duties for the sufferer. Sickness was often attributed to some evil spirit, and many forms of magic and incantation were used to expel this evil spirit from the patient. The practice of massage probably arose from the early pummeling and pounding of the patient's body which the nurse must have practised in order to drive out the evil spirit, and this primitive nurse may even have assisted in many heroic measures such as trephining, or making a hole in the skull, to drive out the malign demon, plunging the patient into hot or cold water for a similar purpose, burning the patient with hot instruments, and using nauseous drugs so as to kill or drive out the devil possessing the unfortunate victim.

It would be interesting to review in detail the duties of the temple women of ancient Egypt and the Hasidic associations of the Jews, a society whose special obligation was the visiting of the sick. The Greek temples of Æsculapius with their nursing priestesses are also not without interest.

The ancient Greeks had many temples which also served as hospitals and sanatoria. These beautiful white marble temples had hospital wards and corridors, baths, out-door theatres and gymnasia, and were often placed in a setting of great beauty amongst hilly forests, usually near mineral springs. They were called "Asclepieia," being named after the Greek god of medicine "Æsculapius." The patients were received by physician priests, who entertained these patients by recounting the deeds of Æsculapius, and they emphasized the success of the temple treatment and the remedies employed, and offered appropriate prayers and sacrifice. After purification by a bath from the mineral spring, massage, inunction and other methods were employed, and the patient was then allowed to sleep in the sanctuary during the night. The priest often disguised as a god appeared to the patient and offered medical advice or often this advice came in a dream which was afterwards interpreted by the priest.

Many of these temples were inhabited by a number of harmless sacred snakes, and if one of these obliging reptiles could be persuaded to lick the diseased part or entwine itself around the body of the patient, the omen was considered a happy one, and this treatment was considered of great importance. I had thought of suggesting to the Mercy Hospital that they should secure a lot of these animals for the treatment of the patients, but upon further consideration such drastic treatment might not be welcomed by some of the inmates of the hospital, especially if before entering the hospital they had been partaking of some of the alcoholic stimulants which apparently can be still obtained at the present time.

The patients often slept in the open air and were nursed by two sets of "priestesses," one set assisting in the so-called holy mysteries and the other assuming the more practical duties of the trained nurse.

Time will not permit a more lengthy survey of these matters, and we must proceed to the Christian era for a further consideration of our subject.

Christianity and Trained Nursing

At the beginning of the Christian era nursing received a great impetus, mainly owing to the teaching of its Founder. Many devoted women of the early church took up the care of the sick, and St. Paul in his epistle to the Romans mentions "Phœbe, our sister—of the church of Cenchrea." She was a church deaconess

who formed an extensive organization for nursing the sick poor, and made journeys to Rome, "succoring many." Many of the widows and daughters of the Roman officials and other Christian women were ordained as deaconesses by the bishops, and often traveled to the eastern church communities or west to Gaul and Britain to minister to the sick. In Constantinople, under St. Chrysostom, about 400 A. D., a community of forty such women, under Olympia, devoted their lives to the care of the sick.

The letters of St. Jerome also describe many converts to Christianity among high-born Roman matrons, such as Marcella, who turned her palace into the first monastery for women, and Fabiola, who founded in her home the first free Chrisitan hospital, nursing the sick. Paula, also the friend of St. Jerome, established with her wealth many hospitals along the route to Jerusalem, and herself nursed in various places, including Jerusalem.

The example of these women caused many other persons to found hospitals in various other cities, and in addition we find the diakonia, or homes of the deacons opened to the sick and stranger, and the xenodochia or retreats for strangers, lepers, orphans, the aged, and the destitute.

The Knights Hospitalers of St. John of Jerusalem, the Teutonic Knights, and the Knights of St. Lazarus, of the middle ages, each had a special subdivision for female nurses, and these orders built many hospitals, and the women practised nursing, especially upon many of the victims of the various wars and crusades which occurred at that time. The Hotel Dieu was a famous hospital which was established in Paris about 660 A.D. The hospital sisters performed the duties of nursing in this institution and for 500 years they remained one of the few organized sisterhoods in a large hospital. Nursing, however, became gradually somewhat neglected.

In the latter part of the twelfth century, this spirit of service was again resurrected through the example and teaching of St. Francis of Assisi. After a somewhat worldly youth this lovable and gentle character forsook the world and established his order of the Brothers Minor, which later became the famous Franciscan order. They became especially interested in the cure of leprosy and tuberculosis, and by improving social conditions and establishing various sanitary methods they really antedated the modern campaign against tuberculosis.

The young girl, Clarissa, also forsook the worldly circle and later established the "Clarissas," who assumed a life of poverty, nursed the sick, and aided the Franciscan Brothers in their merciful work. A number of other nursing orders was established at this time, but in this brief account of the development of trained nursing it will be impossible to consider these orders in detail.

The work of St. Vincent de Paul created a new epoch in nursing, and this was especially needed in the troubled period following the

thirty years war, and the famine and pestilence caused by this and other conditions. This saint came from good peasant stock, and his chief characteristics were humility, marked common sense, unselfishness, a powerful mind and great eloquence.

After an adventurous career, including travels in many foreign lands and imprisonment, he finally settled in Paris near La Charité Hospital, where he assisted the brothers in nursing. He soon saw the necessity for female nurses and organized the "Associationrof Charity," in which Mlle. Le Gras soon took a most active pa t. In addition to nursing, this Association greatly ameliorated the condition of the poor by methods which are essentially modern. Following this, the Dames de Charité were organized for the special purpose of securing secular volunteers for nursing in the hospitals. In November, 1633, Mlle. Le Gras, with five sisters, took possession of a small house in Paris, which became the origin of the "Sisters of Charity." They not only nursed cases in hospitals, but founded orphan asylums and performed splendid service on the battlefield, especially during the Franco-Prussian war. They were soon able to furnish nurses for many of the other hospitals in France and by 1894 were to be found in 24 different countries serving and directing 1,977 institutions. The good old saint showed his knowledge of human nature in the early stages of the organization when some of the more worldly suggested that the head dress might be changed for different places. He replied: "No, they will have as many hats and bonnets as there are cities and countries." Instead he adopted the simple headgear of the peasant girls of France, a portion of the still ever-welcome garb of the "Sisters of Charity."

During the time which I have rapidly reviewed much good had been accomplished in establishing methods for the care of the sick, but many reforms were still necessary before the profession of nursing could extend its beneficent work for the public in general.

The secular nurse was often illiterate, corrupt and overworked, and at times strong drink was one of her weaknesses. Dickens has added a touch of humor to this type of nurse in the character of "Sairey Gamp" by describing her great solicitude and love for her fellowman. "Mrs. Gamp, if there ever was a creetur to be got at eighteen pence a day for working people and three and six for gentle folks, you are that person." "Mrs. Harris, I says to her, do not mention the charge, for if I could afford to lay all of my fellow creeturs out for nothing, I would gladly do it, such is the love I bears them."

History of Modern Medicine

The wonderful development of modern medicine, which trained nursing was soon to follow, began about the middle of the 19th century, and one of its most brilliant triumphs was the discovery

of anæsthesia. We can only briefly consider this discovery by mentioning the name of William Thomas Green Morton, trained in part at the Washington University, which later became the College of Physicians and Surgeons, now a part of the University of Maryland. After experimenting on animals and later on himself with ether, he made his dramatic demonstration on October 16, 1846, in the Massachusetts General Hospital. The amphitheatre was crowded, and Dr. John Collins Warren was the surgeon who removed a tumor from the neck of Gilbert Abbott without pain or return of consciousness after Morton had administered this anæsthetic. Thus Morton "made of pain a dream," and Bigelow remarked, "I have seen something today which will go around the world." It did, bearing the tidings of freedom from pain and suffering to millions of people.

Following the work of Pasteur, Sir Joseph Lister in 1878 began to publish his articles showing how bacteria or germs could be kept out of wounds, especially in surgical operations. Many of the capital operations which are performed today were not thought of until this discovery, and millions of lives have been saved by the application of the rules of aseptic surgery. From about 1880 on, the germs of many of the infectious diseases were discovered by Pasteur, Koch, Loeffler, and other investigators, and curative serums have now been produced which for instance will reduce the fatality of diptheria from 50% before antitoxin to 0% today if the antitoxin is used within the first 24 hours of the disease. Preventive and curative serums for lockjaw, meningitis, food poisoning, and other conditions have also been discovered, and preventive vaccines for smallpox, typhoid fever, pneumonia, hydrophobia, and other conditions, are now the prized possessions of the medical profession. Many discoveries in physiology and chemistry have also helped to make an exact science of medicine, and such conditions as certain forms of goitre, diabetes, various food deficiencies from the lack of vitamines, and other morbid conditions, can be benefitted or cured by the application of these discoveries. Public health has been greatly benefitted by various studies in bacteriology and chemistry, and the purification of the water and milk supplies has greatly reduced the prevalence of typhoid fever and infantile diseases. The discovery of the tubercle bacillus has greatly aided in the fight against tuberculosis, and the prevalence of this disease has been steadily decreasing since the discovery of the bacillus in 1882. James Carroll, a graduate of the University of Maryland, gave his life to prove that yellow fever is carried by the mosquito.

It was important that the trained nurse should benefit from the result of all of these and many other important discoveries, and the time had arrived when nursing methods must be systematized and improved, in order that this profession should keep abreast of the times.

Florence Nightingale

From what has gone before it must be clear that the exacting details of surgery and medicine must be partially carried out by nurses thoroughly trained both in surgical technique and the care of both surgical and medical cases. A genius and systematizer, therefore, was needed, and Florence Nightingale met this demand.

She began her work by several months training with Pastor Fliedner at Kaiserswerth, and then inspected a number of continental and Irish hospitals, and in 1853 she studied with the Sisters of Charity in Paris. She then started private nursing in a London house and later nursed the cholera patients in the Middlesex Hospital, but her great opportunity came with the outbreak of the Crimean war in Russia.

Although the English were winning victories, yet news reached England of the frightful condition of the sick and wounded. They were without bandages, clothing, food, medicine, and decent sanitary arrangements, and there was a dearth of physicians and no nurses for the English soldiers. It was at this time that Florence Nightingale heard the "one clear call." A war correspondent named Russell sounded this in the following words: "Are there no devoted women amongst us able and willing to go forth to minister to the sick and suffering soldiers of the East? . . . Must we fall so far behind the French in self sacrifice . . . in a work which the Master so signally blesses as done unto himself? 'I was sick and ye visited me'." Miss Nightingale responded to this appeal, and Sir Sidney Herbert, the English Secretary of War, placed the organization of a nursing corps in her charge. With forty nurses, including both Anglican and Catholic Sisters, she landed at Scutari in November, 1854.

I shall not shock this audience with a description of the horrors which she found at the Barrack Hospital, but it may not be injudicious to state that the mortality among the sick and wounded was about 33%. The "Lady of the Lamp" thoroughly organized the various hospitals throughout the Crimea, and soon controlled about 200 nurses, establishing for the first time a nursing system for the English Army, and by fearless criticism when needed and untiring energy she saw the death rate drop from 33% to 2.2%.

After her return to England she established the first training school for nurses at St. Thomas's Hospital in London, and today there are 1,734 training schools for nurses in the United States alone.

The Various Fields of Trained Nursing

It might now be asked what are the present opportunities for the trained nurse? It can be answered that they are most favorable and abundant. Trained nursing is no longer confined to the hospital, but has entered many fields.

Three important divisions of nursing are: (1) Private or continuous duty with one patient, usually in the household. (2) Hospital service. (3) Visiting nursing. We are all familiar with the two former, but some of you may be interested to know how visiting nursing has been extended.

Patients often need many things beside the knife and drugs, and these workers study the circumstances of the patient, and afford aid and comfort in follow-up work during recovery and convalescence so that the patient may be relieved of worry and anxiety in order that recovery may not be retarded. Many methods of after care, such as instruments, crutches, splints, and other apparatus, must be furnished, and many lives especially of children, are saved by a few weeks in the country. All this and much more is the work of the visiting nurse. She is also concerned in the nursing of such cases as tuberculosis, and the care of expectant mothers and sick children. This work has perceptibly lessened the deaths in such conditions.

But nursing has branched out in other directions, and we now have the public health nurse, and the Red Cross nurse.

Public Health Nurse

The public health nurse is mainly concerned in the prevention of disease, and there is not the slightest doubt that her services have been instrumental in lowering the rates of sickness and death both in rural sections and in cities.

One of the most important duties is public instruction, and by tactful methods in maternal care and infant welfare, tuberculosis, and the various other infectious diseases such as diptheria, typhoid fever, and the eruptive fevers, they have greatly aided in lessening the mortality or prevalence of these conditions. These nurses are usually employed by Federal, State, County or City Health Departments, although private philanthropy often assists. By helping the Health Officers in the administration of various vaccines they reduce the morbidity from smallpox, scarlet fever, typhoid, diphtheria, and other infectious diseases.

The nurse plays a great part in the Society of the Red Cross, and especially in war has been of the greatest assistance in medical and surgical nursing. The following citation of a Sister in France in the presence of the Army represents the heroism of many Red Cross nurses:

"Sister Maria Theresa:—You were only twenty years of age when you first gave your services to the wounded at Balaclava, and you were wounded in the execution of your duty. You were again wounded at Magenta. You bravely nursed the wounded through all our wars in Syria, China, and Mexico. You were carried off the field at Worth, and before you had recovered from your injuries you were again performing your duties. When a

grenade fell into your ambulance you without hesitation took it in your hands and carried it to a distance of a hundred yards, when it exploded, wounding you severely. No soldier has ever performed his duty more heroically than you have done, or lived more successfully for his comrades and his country. I have the honor to present you, in the name of France and the French Army, with the cross which is conferred only on those who have shown remarkable bravery in action. Soldiers of France—Present arms!"

The Red Cross also undertakes relief work in famine, pestilence, and such calamities as floods and earthquakes. In all this the nurse has played her good part.

School Nurse

Following upon work in England, Dr. Lederle, the Health Commissioner of New York, appointed 25 nurses for work in the public schools, and most large cities have adopted this plan. It is better for the nurse and medical inspector to work together, as, like Longfellow's bow and cord, they are "useless each, without the other." In cooperation they have discovered and remedied many serious conditions among school children, rendering them more capable of meeting their duties as healthy and useful citizens. Many infectious diseases are also detected by the school nurse, and infection is thus lessened throughout the community.

But there is one career which I have not mentioned, yet alas! it sometimes happens that nurses marry doctors. I reversed the process myself and married a nurse, a step which I have never regretted. It may be, therefore, that some young doctor is contemplating a similar step, and if so there be I am going to give him the benefit of my somewhat limited experience in securing the prize. Women are romantic, and enjoy being wooed in rhyme and poetry. I am sure that many of our young friends can write much better verses than I, but merely as an example of the gentle art, I am going to recite a jingle of my own which may not have been without effect in securing me a much better half. The allusion to wine in the verses is merely of historical interest.

Here's to wine, the arrant jade
  That drives away our fears,
And when fair maidens steal our hearts
  It helps to dry our tears.

Here's to love, whose arrow keen
  Hath pierced me through and through;
And when he takes another shot,
  I hope he'll aim at you."

Conclusion

But when we return to the past it requires no great faith to believe that the spirits of the gentle and loving Saint Francis, the

patient and sagacious Saint Vincent, the far-seeing and dynamic Florence Nightingale, and the many other devoted workers in the vineyard, are still with us to urge us on to greater endeavor.

The presence of "the mighty dead that lived in endless praise" is so well indicated by a scene from Maeterlinck's play of "The Blue Bird," that I shall conclude by attempting to briefly describe it.

Tyltyl, the boy, and Mytil, the girl, led by Light through many adventures in the search for the Blue Bird, or happiness, are told at last that they shall see the dead. She leads them to a graveyard with tombstones and wooden crosses. The scene is most depressing, and Tyltyl is told to turn his ring when the clock strikes twelve and he will see the dead. At last the hour of midnight strikes, and the girl is seized with terror, but at the last stroke bolder boy turns the ring.

"In a moment, in the twinkling of an eye, the scene changes, and a beautiful garden is discovered. The flowers open their blooms, and the song of happy birds is heard. The children, hand in hand, seek in vain for the tombs, and at last the girl asks, 'Where are the dead?' And the boy exclaims in triumphant exaltation, 'There are no dead!' "

PASSED ASSISTANT SURGEON, U. S. N., JAMES M. M. AMBLER, M.D., *and the* JEANETTE ARTIC EXPEDITION*

By S. T. Earle, M. D.

Mr. President and Gentlemen:

It is a sad duty that I assume tonight when I undertake to tell you something of the noble deeds and heroic death of James Markham Marshall Ambler, M.D., who was graduated from the University of Maryland, March, 1870, and practised general medicine in this city until April, 1874, when he enlisted in the United States Navy and was commissioned as Assistant Surgeon.

My chief object in presenting this biographical sketch of Dr. Ambler is that a record may be kept among the archives of the Medical and Chirurgical Faculty and, I hope, of the University of Maryland of his noble life and heroic death. In honoring his memory we are honored ourselves by the part we may have contributed in the formation of such a noble character.

As a classmate and close personal friend of mine for the two years that we attended the University of Maryland, I can state that he was held in high regard and greatly esteemed by the Faculty and students. As an evidence of which he had as his preceptors three of the most progressive and highly cultured members of the Faculty, Drs. Miles, Chisolm, and De Rossett, and was a member of the students Rush Medical Club, the members of which were selected for their good standing in the class, and who wished to improve their opportunity by being quizzed by their fellow members.

The following sketch is taken from The Journal No. 18 of the Association of Military Surgeons for 1906, and from the United States Naval Bulletin for April, 1917, the latter containing the full report of Dr. Ambler's Diary.

Dr. James Markham Marshall Ambler was born in Fauquier County, Virginia, December, 1848. He was the son of Dr. Richard Cary Ambler and Susan Marshall, a niece of the Chief Justice, and a grand-daughter of Robert Morris, the financier of the Revolution. Dr. Ambler received his early education at the local schools,

* Read before the Book and Journal Club, Medical and Chirurgical Faculty of Maryland, March 19, 1925.

attending later Washington and Lee University at Lexington. He studied medicine and was graduated from the University of Maryland in 1870, and was commissioned an Assistant Surgeon in the Navy in 1874. He served on the Mayflower and Kansas, North Atlantic fleet, 1874-1875, and Training Ship Minnesota, 1875-1877, and in this year was promoted Passed Assistant Surgeon. At the time of his orders to the Arctic Steamer Jeanette, Dr. Ambler was serving at the Naval Hospital at Norfolk, Va. He was due for sea service and was in expectation of a detail to the flag ship of the Mediterranean Squadron when he was requested by the Navy Department to volunteer for the Arctic expedition, patronized by James Gordon Bennett and commanded by Lieutenant DeLong, U. S. N. This was optional.

Ambler was in every way fitted for the unusual duty that he had accepted. He was unmarried and in the fullest sense of the word a worthy descendant of the many distinguished families of which he came. Born and reared in the invigorating climate of Piedmont, Va., he was blessed with strong health, and possessed a fine physique, being tall, broad-shouldered, and well-proportioned. He was a man of commanding appearance, and happily combined dignity of manner with an admirable courtesy. It has been said that the education of the Virginia boy consists in "learning to ride, shoot, and tell the truth." We well know that this man carried his honor so high that the terrible vicissitudes left it fair and untarnished.

The Jeanette Expedition was commanded by Lieutenant De Long, a very able officer, and associated with him were Lieutenants Chipp and Danenhower,Past Assistant Surgeon Ambler,Chief Engineer George Melville, U. S. N.; Mr. Collins as scientist, and Captain Dunbar, an experienced ice pilot. Sailing from San Francisco on the 8th of July, 1879, the Jeanette passed Behring Strait, and directed her course to the north-west. Meeting the ice pack early in the year, the ship boldly plunged into it, and on the 6th of September was solidly frozen in. From the date of entering the pack until June, 1881, the ship was an absolute prisoner, as were the officers and the crew, if we except the forays in search of game, and Melville's journey to and planting the flag on Henrietta Island, which was accomplished under great difficulties. Melville in his honest, terse English, tells us of De Long and Ambler coming out some distance to "pick him up" and continuing says: And the Doctor, generous soul that he was, inquiring first of the health of the party, said in his hearty way, "old man, I am glad you have had the opportunity of first unfurling our flag with honor".

Dr. Ambler is shown to have been on the alert for scurvy, the bane of Arctic explorers, yet greatly to the credit of the expedition, not a well authenticated case occurred. De Long's active mind extended to this branch of polar exploration also, involving as he

knew, the success of his project, and today in the archives of the Navy Department is a careful study of this malady, which is in itself a monument to the learning and industry of its author. We must attribute this immunity of the Jeanette's company in this regard, to the abundance of canned provisions, and the great care to furnish portable water (that from melting snow not being used, except on the retreat). But in lieu of scurvy another class of disease occurred; digestive troubles in various forms—cramps, constipation, diarrhoea, and dysentery.

Ambler, by analysis, proved these to be due to lead poisoning from soldered cans. Several of the crew were much weakened in this way, and had to be transported over the ice, on the long journey to the Lena. When we read the journal kept by Ambler, not only on this ship, but on the ice, we are at once aware that his duties were no sinecure. His own health too was impaired by the strain and unnatural conditions so long borne. Ere the retreat commenced, in entering his daily record, he says, "I am passing bloody stools daily."

The retreat of De Long's party over the Arctic ice to the mouth of the Lena River stands today without a parallel for indomitable courage displayed, for the discipline preserved, and for cheerful discharge of duty. When the ship sunk, she was abandoned with perfect order, every detail being perfected long before. The ship's company camped upon the ice, in sight of the ship, but their brave hearts did not go down with her. Their situation was most lamentable, their health had already been sorely tried, when they were called upon for almost superhuman effort. Lieutenant Chipp was so ill as to require great care, and upon him Ambler bestowed the greatest attention. Lieutenant Danenhower's eyes had failed, and he was an additional burden. With a sick list and a limited supply of provisions, they must walk 500 miles over a road cut through the ice, or across bergs that treacherously parted beneath their feet. Yet from all accounts, these men accepted the inevitable cheerfully, and their diaries are full of jokes and banter. Ambler's great longing, Mellville tells us, was to renew his "electrical connection with the earth."

In addition to the transportation of the sick and hospital supplies, tents, etc., Ambler was made road-master, and put in charge of bridging and rafting, the difficulties of which increased so, finally it required the efforts of all hands to advance one piece, and as the three heavy boats they must carry, with which to meet the open waters of the South, added to provisions, etc., required thirteen teams, every mile they traversed the ice was traversed thirteen times.

We wonder how this band of men could ever have continued in an effort, apparently so hopeless, with a very limited diet and few hours of undisturbed sleep. Often the floes on which they encamped would part in many pieces, carrying men, provisions,

dogs, and equipment in as many directions. The labor, danger, and anxiety, under such circumstances, was enough to crush the most indefatigable. Even at night the ice cracked and parted beneath them. Those sleeping in the middle of rubber sheets being saved by the weight of those at the ends. But a still more appalling fact was yet to face this hardy band advancing thirteen miles for one, and this was the discovery of a drift of twenty-six miles to the Northward. De Long imparted the information to but few of his command. Shoving and pulling their boats through snow drifts waist deep, or dragging them over the roughest ice, they could keep little on their feet, the hide shoes they made quickly cutting to pieces.

Ambler tells us in his journal of his repeated passage and repassing over the day's advance, and on one occasion being so late and seeing so badly when going to bring up the rear, composed of the sick, falling in the water to his neck and nearly drowning.

Yet amid all we perceive a high spirit and admirable discipline, duties were as distinct, stations and quarters as surely indicated as on ship-board; while on Sundays, they never failed to read the act for better government of the Navy.

The Medical Journal is kept with remarkable regularity and neatness, while we wonder at the ink's not freezing, or how the medical officer could hold a pen. Day in and day out, the condition of his sick, the care of his stores, the progress of his party, all are noted, in clear and concise style.

Setting foot on land for the first time in two years, they at last obtained a little rest on Bennett Island, where poor Jack's wail was "on shore with two years' pay and nowhere to spend it."

Winter set in during August, accompanied by terrific gales, and as most of the journey was now in boats, these half-starved creatures were so often wet, as to be nearly frozen to the thwarts upon which they sat. From August 6th to September 16th, the period between leaving Bennett Island to the time of Melville's entering the Lena River, six tents and their occupants were doubled in three boats, and existence was one unending battle with the ice and the tempest. On reaching the coast, the three boats were separated in a Northeast gale. That commanded by Lieutenant Chipp was never again heard from. Melville in the whale boat, which proved the most worthy craft, after incredible hardships, landed in the Lena River and crawled ashore with his men. De Long's boat, which also carried Ambler, struck the river at one of its termini, well to the westward of Cape Barkin, to which the loss of his party was largely due as the river with its multitudinous divisions and subdivisions, made traveling to a strong, well-nourished man difficult, but De Long's party was feeble, and with no authentic map, and its fate hopeless from the first. From the time of landing, September 17th to October 11th, the little remnant struggled on, cheered by the indomitable courage

of De Long. Ambler still husbanded his stores, issued alcohol by the ounce and glycerine by the drachm. He was overburdened with his helpless comrades with frost-bitten feet, and to them he still maintained his ministrations, still daily wrote in his journal, which remains today in archives of the Bureau of Medicine and Surgery of the Navy, a monument to his professional devotion. De Long decided in his extremity to send two men in advance to seek assistance.

Ambler writes in his journal, 9th October, 1881, "the Captain gave me the option of going ahead, but I thought my duty required me with him and the main body for the present," and later he cheerfully adds, "Ninderman and Nors (these two men were found and saved by Esquimos) are ahead, God give them aid and we are getting on." October 12, 1881, is the last record. "We have been without food since Sunday, except alcohol an ounce, glycerine a drachm yesterday, lying in hollows on the river bank." We cannot contemplate the suffering of this company between this date in Dr. Ambler's journal, and the date of his last words, written October 20th, 1881, to his brother Edward Ambler, Esq., Markham P. O., Fauquier County, Va., without a feeling of deepest sorrow. He says in part: "I write these lines in the faint hope that by God's providence they may reach you all at home. I have now for myself little hope of surviving. We have been without food nearly two weeks, with the exception of four ptarmigan among eleven of us. We can barely manage to get wood enough to keep warm and in a day or two that will be passed. If it has been God's will for me to see you all again, I had hoped to have enjoyed the peace of home living once more. My mother knows how my heart has been bound to hers since my earliest years. God bless her on earth and prolong her life in peace and comfort. May his blessings rest upon you all. As for myself, I am resigned, and bow myself in submission to the Divine will. To all my friends and relatives a long farewell. God in his infinite mercy grant that these lines may reach you. I write them in full faith and confidence in the help of our Lord Jesus Christ." Melville, who found the bodies, tells us Ambler was the survivor.

Finding of the Bodies.

The following is taken from Melville's book "In the Lena Delta, Page 333."

De Long had crawled off to the northward and about ten feet from Ah Sam, while Dr. Ambler was stretched out between his feet nearly touching the latter and his head resting on a line with De Long's knees. He lay almost prone on his face with his right arm extended under him, his left hand raised to his mouth. In the agony of death he had bitten deep into the flesh between his thumb and forefinger, and around his head the snow was stained with blood.

I believe him to have been the last of the unfortunate party to perish. When Ah Sam had been stretched out and his hands crossed upon his breast, De Long apparently crawled away and died. Then, solitary and famishing, in that desolate scene of death, Dr. Ambler seems to have taken the pistol from the corpse of De Long, doubtless in the hope that some bird, or beast might come to prey upon the bodies and afford him food; perhaps alone to protect his dead comrades from molestation, in either case or both, there he kept his lone watch to the last, on duty, on guard, under arms.

The remains were returned to the United States, those of Ambler being deposited in the church yard at Markham, under the shadow of the Blue Ridge, where he was born and had passed his early years. Both in the church and at the Naval Medical School, his brother officers have erected tablets to his memory with the legend

"Love of Duty Stronger Than Love of Life.

There is such high purpose, such moral greatness, in the record of a life such as this, as to make it worthy the best examples and brightest days of chivalry.

BOOK REVIEWS

Physiotherapy. Theory and Clinical Application. By Harry Eaton Stewart, M.D., Attending specialist in Physiotherapy, U. S. Marine Hospitals, N. Y., etc. New York: Paul B. Hoeber, Inc. Cloth, $7.50 net. 1925.

During and since the World War Physiotherapy has been receiving ever greater and greater recognition from the medical profession as a legitimate and useful measure for the relief of the handicapped when applied intelligently and properly. Electricity, hydrotherapy, massage, phototherapy, actinotherapy, thermotherapy and exercise have a large range of helpful application in many and varied lesions, such as diseases and injuries of the neuro-muscular system, of the bones and joints, diseases of the cardiovascular system, of the gastro-intestinal tract, of the respiratory apparatus, etc. To obtain results, however, these agents cannot be used haphazardly, but must be administered by those who have taken the time to become versed in their administration. Otherwise failure is almost sure to result. This book should play a large part in stimulating interest in the uses of physical agents to the cure of disease and injury. It covers the entire field of physical therapeutics in a condensed and simple form. As such it should meet a distinct need, for, heretofore, one has been compelled to wade through a number of volumes of highly technical character to obtain the desired information. The natural forces are ever receiving more and more recognition as valuable adjuncts to medicine and surgery in the treatment of physical defects. This book aims to indicate how to choose properly and to blend the indicated types of physiotherapy in the treatment of the maimed and afflicted. The subject is one of ever growing importance and the profession is indeed fortunate in possessing a book covering so adequately, conservatively and modestly such a wide field of effort as Dr. Stewart's Physiotherapy.

The Conquest of Cancer. By H. W. S. Wright, M.S., F.R.C.P. With an Introduction by F. G. Crookshank, M.D., F.R.C.P. 1925. Cloth, $1.00. New York: E. P. Dutton and Company.

Cancer is such a burning question that any light that can be thrown upon its elimination is of the highest importance. During the year 1921, one out of every seven persons over 30 years of age died of cancer. These figures make it plain that the question is not merely one of interest to doctors and scientists; it is of concern to every one of us, and to one person in every ten it has a direct and very personal interest. The burden of the book is that as the mortality in such terrifying diseases as tuberculosis and typhoid fever has been reduced by education of the public, Wright believes that the mortality of cancer can be reduced in the same way. As a link in the informing of the public of the nature of cancer and what may and may not be expected, this little monograph should serve a useful purpose. It can do no harm and may accomplish much good. At any rate the public is entitled to an authoritative statement on the status of this question. They should be told that at present the only hope of the cancer victim for prolonging his life is in the early and thorough eradication of the disease with the knife. The lesson can only be driven home by such propaganda as is contained in this booklet. It gives us much pleasure to commend it to the readers of the *Bulletin*.

An Intermediate Text-Book of Physiological Chemistry. By C. J. V. Pettibone, Ph.D., Associate Professor of Physiological Chemistry, Medical School, University of Minnesota, Minneapolis. Third Edition. St. Louis: The C. V. Mosby Company. Cloth, $3.50 net. 1925.

No further argument need be adduced that this book has supplied a definite

niche in the medical curriculum than the fact that it has been necessary to bring out a third edition. It covers most thoroughly in a practical and simple manner the elementary features of physiological chemistry, and should prove in the future as heretofore a most excellent guide to beginners in this field of medicine. Sections are devoted to carbohydrates, fats, proteins, important foodstuffs, digestion in the mouth, in the stomach, in the intestine, absorption, metabolism, etc. Especially attractive are the sections devoted to the carrying out of laboratory experiments in part 2 of the manual. It affords us much pleasure in recommending this book to those desirous of possessing a reliable elementary book covering this field of medical effort.

An Introduction to Sexual Physiology. By F. H. A. Marshall, F. R. S., with illustrations. Cloth, $2.75 net. 1925. New York and London: Longmans, Green and Company.

This is an elementary text-book intended for the purpose of introducing biological, medical and agricultural students into the mysteries of sexual physiology. It would prove equally valuable to pupil nurses or any others interested in an accurate description of the underlying factors governing sexual physiology. It is written in a very pleasing, yet simple style, thus rendering a ready grasp of the subject by the reader. Anybody wishing to gain an insight into this important subject, yet not prepared to understand a more complex work will find much satisfaction in this little book. It certainly meets the needs for which it is intended excellently. It will be found a reliable, brief and trustworthy guide to a thorough understanding of the male and female reproductive organs and covers such additional questions as the menstrual cycle, puberty and the climateric, the development of the embryo, attachment of the embryo, duration of pregnancy, the cause of parturition, the puerperium, lactation, parturition in the lower mammals, the internal secretions of the organs of reproduction, heredity and sex, fertility, etc. It gives us great pleasure to commend it to the class of readers for whom it is primarily intended, but it can be read with profit by any intelligent person.

Simplified Nursing. By Florence Dakin, R.N., Inspector of Schools of Nursing State of New Jersey. Illustrated. Philadelphia and London: J. B. Lippincott Company, 1925. Cloth, $3.00 net.

Covering as it does the fundamentals of nursing, this book should prove most helpful to the nurse in solving the problems of her special field. The content has been confined to methods which have proven useful in the hands of the author, and to methods which may easily be carried out by any intelligent person in the home. It is a veritable directory of the simple methods used in the sick room and gives full and explicit directions how to carry out the various procedures, treating of such subjects as inhalation from a pitcher, from under a canopy or croup tent, proctoclysis set, administration of medicine, dosage, isolation, fumigation, quarantine, bandaging, bed making, simple remedies in emergencies and a host of other useful information. It is a book that should be in the hands of every house-wife or of those engaged in nursing the sick.

Synopsis of Gynecology. By Arthur Gray, F.R.C.S., M.R.C.P., Gynecological Surgeon Hampstead General Hospital, etc. 1925. Cloth, $3.75 net. London and New York: Longmans, Green and Company.

This little volume of some 300 pages is a compedium of the diseases of the female generative tract. It is put up in such style as to serve as a trustworthy guide to those wishing to make a rapid review of this subject. If supplemented by larger and more complete works, it has a very definite place in the scheme of medical education, otherwise it is too skimpy. Special attention has been given throughout the volume to the pathology of the various conditions described, as it is felt that this aspect of the subject is of paramount importance, not only to the student but also to the general practitioner. The details of gynecological operations have been omitted, as it is felt that these can only be efficiently

grasped by seeing the operations performed. Those desiring to make a rapid review of the subject will find this book an inestimable aid. Those wishing a book of this character will be more than pleased with the above mentioned volume.

Approaching Motherhood. Questions and Answers of Maternity. By George L. Broadhead, M.D., Visiting Obstetrician, Bellevue and Allied Hospitals, Harlem Division, New York City. 1925. Cloth, $1.25 net. New York: Paul B. Hoeber, Incorporated.

This book is intended to supplement the advice of the physician to the expectant mother. It deals with many vital questions put by the pregnant woman to her obstetrician. Its prime purpose is to give the woman about to be confined reliable information concerning such questions as when a baby's heart should be heard; how to prevent nausea; the symptoms of beginning labor; the significance of swelling of the hands and feet during pregnancy,and a host of other vital questions which concerns her peace of mind and happiness. Physicians should not hesitate to place it in the hands of their clientelle, especially if their practice is located at a distance. It contains nothing harmful, is conservative of statement and replete with needful advice.

DEATHS

Dr. Oliver Tydings, Chicago, Ill.; class of 1877; member of the American Academy of Ophthalmology and Oto-Laryngology and of the Chicago Ophthalmological Society; aged 71; died, September 12, 1925, of cerebral hemorrhage.

Dr. Robert E. L. Flippen, Pilot Mountain, North Carolina; B. M. C., class of 1892; aged 54; died, September 1, 1925.

Dr. Carlton Myron Cook, Baltimore, Maryland; B. M. C., class of 1893; for many years associate professor of obstetrics at his alma mater; formerly on the staff of the Maryland General Hospital; aged 65; died, September 8, 1925.

Dr. John Francis O'Connor, Worcester, Mass.; P. and S., class of 1896; aged 57; died, August 1, 1925, of carcinoma of the mouth.

Dr. Bernard W. Switzer, Lexington, Virginia; P and S., class of 1893; aged 55; died, September 2, 1925, of heart disease.

Dr. John Morton McIlvain, Pawtucket, Rhode Island; class of 1892; aged 57; died, September 11, 1925, following a long illness. In 1894, he was awarded the degree of D.D.S., at the University of Michigan and at the time of his death was engaged in the practice of dentistry in which profession he had attained a position of prominence in his community.

Dr. Henry Boteler Gross, Jefferson, Maryland, class of 1871; aged 76; died, September 14, 1925.

Dr. Hickman Ray, Durham, North Carolina; class of 1915; aged 36; died, October 17, 1925.

Dr. J. S. Abernethy, Charlotte, North Carolina; P. and S., class of 1878; died recently.

Dr. William Henry Talbott, Washington, District of Columbia; class of 1904; aged 44; died, October 28, 1925.

Dr. Frank Steinke, Elizabeth, New Jersey; P. and S., class of 1910; served in the M. C., U. S. Army, during the World War; aged 42; died, November 5, 1925, of heart disease.

Dr. G. A. Foster, Liberty, North Carolina; B. M. C., class of 1891; aged 67; died, October 22, 1925.

Dr. Louis Stinson, Jacksonville, Florida; class of 1911; aged 43; died, November 1, 1925, of pneumonia.

Dr. Lloyd Hampton Forman, Buckhannon, West Virginia; P. and S., class of 1885; aged 64; died, October 30, 1925, of heart disease.

Dr. Ferdinand King, New York, New York; P. and S., class of 1874; aged 73; died, November 15, 1925.

Dr. Theodore Wilcox Bebout, Stirling, New Jersey; B. M. C., class of 1897; aged 52; died, November 8, 1925, of heart disease.

Dr. Edwin D. Cronk, Woodbine, Maryland; class of 1884; aged 65; died, December 10, 1925, while on his way to attend the Carroll County Medical Society.

Dr. Guy L. Zimmerman, Lemasters, Pennsylvania; B. M. C., class of 1906; aged 51; died, September 26, 1925, folloing a long illness.

Dr. Clifford T. Sappington, Oxford, Maryland; class of 1903; died, November 20, 1925. He was a son of the late Dr. Thomas P. Sappington, class of 1869, of Unionville.

Dr. John Dade Darby, Oakland, Maryland; class of 1912; served in the M. C., U. S. Army during the World War; aged 37; died, October 11, 1925, of acute indigestion.

Dr. Lee Victor Knapp, Danbury, New Hampshire; B. M. C., class of 1897; aged 59; died, in October.

Dr. James Barbour Boldridge, Winston, Virginia; P. and S., class of 1893; aged 72; died, October 1, 1925, of angina pectoris.

EDITORIAL

A Word to the Alumni

The present resources and facilities of the University of Maryland are not sufficient for present needs.

This year's student body numbers 3,555. In many departments the housing facilities and equipment are admittedly inadequate.

Alumni leadership is needed to create an active interest on the part of the general public in the welfare of the University.

Alumni financial support is needed to insure alumni leadership and to perpetuate it for a better University of Maryland.

THE ALUMNI COUNCIL, an incorporated body representing the graduates of all the schools of the University, at the present time is working with the double purpose of

(a) removing the quarters of thirty-five student nurses from tenement houses by erecting an addition to the Nurses' Home at a cost of $30,000;

(b) calling the attention of the large group of alumni to the need for their support and the opportunity for productive endeavor on their part.

Additional contributions toward the Nurses' Home fund to date are shown in the attached list, making to date a total of 348 alumni subscribers.

Through the attached pledge the interest of 500 additional alumni is sought. As one of the selected group, you are requested to sign the pledge of support and return it to the Alumni Council, University of Maryland, Lombard and Greene Sts., Baltimore. Delay on your part will seriously hamper the effort.

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To assist the Alumni Council in its effort to aid the University of Maryland, I hereby endorse the work by my subscription of $5 per month for 5 months, beginning March 1, 1926, the money to be used in building an addition to the Nurses' Home.

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Archibald Cunningham Harrison, M. D.

UNIVERSITY OF MARYLAND

BULLETIN

OF THE

SCHOOL OF MEDICINE

VOL. X APRIL, 1926 No. 4

UNIVERSITY OF MARYLAND

Division of Medical Extension

REVIEW COURSES FOR PHYSICIANS

May 31, 1926—June 26, 1926.

The Division of Medical Extension of the University of Maryland offers this year a series of short courses to the physicians of the State. These courses are not planned, and will not serve, to enable the practitioner to become a specialist. But it is hoped that they will meet the needs of those who wish to review the fundamental data in some field, and to inform themselves concerning recent advances in methods of diagnosis and treatment.

The duration of the courses is brief: four weeks. Each course, however, has daily meetings of from two to three hours, and there should be sufficient time for discussion and explanation during the demonstrations, and for practice in the various diagnostic procedures.

The morning courses will run from nine to eleven-thirty, and the afternoon courses from one o'clock to three-thirty or later. It will, therefore, not be possible to take more than two courses; and those who so desire may register for only one. There will, in addition, be daily clinics from eleven-thirty to twelve-thirty, in medicine, surgery, and the various specialties, which are not a part of the courses, but are open to all the physicians registered. The number of registrants for each course will be limited in order to render instruction more effective.

Information: Questions concerning the courses may be addressed to the—

Dean of the Medical School,
University of Maryland,
Baltimore.

Requirements for Admission: The applicant must be a registered physician in good standing. Preference will be given to physicians registered in Maryland.

Enrollment: Applications for enrollment should state the courses selected. It is suggested that such applications be made promptly as the courses will be filled up in the order that applications are received. Address—

Dean of the Medical School,
University of Maryland
Baltimore

Fees and Tuition: A matriculation fee of $25.00 will be charged to all registrants. No additional fee for tuition will be required of physicians registered in Maryland. For those coming from other states a charge of $50.00 for each course taken will be made.

Registration and Matriculation: Monday, May 31, 1926, 8:30 A. M., N. E. corner Lombard and Greene Streets, Baltimore.

DEPARTMENT OF MEDICINE

DISEASES OF THE CIRCULATORY AND RESPIRATORY SYSTEMS

Daily 9 A. M.—11:30 A. M.

(Limited to Six Physicians)

Dr. M. C. Pincoffs Dr. C. C. Habliston

I—Circulatory Diseases.

Three lectures a week. Three periods a week of one and a half hours each devoted to the examination of cardiac patients in the wards and dispensaries.

The subjects will be taken up under the following headings:

1. Factors in circulatory diseases: myocardial disease: valvular diseases: arrhythmia: blood-pressure abnormalties.
2. Symptoms: physical signs: instrumental methods.
3. Clinical types of circulatory failure: congestive: vasomotor: anginal.
4. Clinical types of cardiovascular disease: rheumatic: arteriosclerotic: syphilitic: etc.
5. Therapeutic principles.

II—Respiratory Diseases.

Three lectures a week. Three periods a week of one and a half hours each devoted to the examination of patients in the wards and dispensaries.

The subject will be taken up under the following headings:

1. Symptoms of respiratory diseases.
2. The technique of physical diagnosis and the interpretation of physical signs.
3. The interpretations of rontgenograms.
4. Clinical types of respiratory diseases.
    a. Tuberculosis of the lungs and pleura.
    b. Acute non-tuberculous diseases: pneumonia: pleurisy: empyema: abscess: infarct: etc.
    c. Chronic non-tuberculous diseases: bronchitis: bronchietasis: asthma: emphysema: etc.
5. Therapeutic principles.

DEPARTMENT OF MEDICINE

CLINICAL PATHOLOGY

Daily 9 A. M.—11:30 A. M.

(Limited to Eight Physicians)

Dr. S. L. Johnson
Dr. L. A. M. Krause
Dr. H. J. Maldeis
Dr. Reed Rockwood

The technique of the simpler laboratory tests will be taught. The more complicated procedures in common use will be demonstrated. The interpretation of laboratory tests and their value in diagnosis and treatment will be discussed. The course will be divided as follows:

1. **Blood** (Nine days)
   Blood counting, making and staining of blood smears, differential counts. Coagulation time. Methods of making blood cultures: drawing blood for Wassermann. Wassermann tests. Widal. Parasitology of blood. Blood transfusion methods. The diseases of the blood-forming organs.

2. **Urine** (Nine days)
   Review of routine urinary analysis. The simpler functional tests of kidney activity: dilution and concentration tests: phthalein execretion: Blood plasma non-protein nitrogen fractions: Laboratory procedures essential for the study of diabetes: quantitative sugar: blood sugar: ammonia: CO_2 tension in blood plasma.

3. **Sputum and Nasal Secretions** (Two days)
   Gross examination. Bacteriology: study of stained smears: study of cultures: B. tuberculosis: B. diptheria: Pneumococci.

4. **Gastric and Duodenal Contents** (Two days)
   Study of the vomitus: types, colour, etc. Gastric analysis after appropriate test meals, including chemical and microscopic studies. Use of the duodenal tube.

5. **Feces** (Two days)
   Gross physical properties. Chemical methods for blood, bilirubin, urobilin, etc. Routine studies with the microscope. Parasitology.

6. **Puncture Fluids**
   Demonstration of technic of obtaining various body fluids. Methods of examination.

DEPARTMENT OF MEDICINE

PEDIATRIC CLINIC

Dr. Charles L. Summers, *Professor of Pediatrics*
Dr. Edgar Friedenwald, *Clinic Professor of Pediatrics*
Dr. C. Loring Joslin, *Assistant Professor of Pediatrics*
D. W. H. Ingram, *Associate in Pediatrics*
Dr. W. H. Warner, *Associate in Pediatrics*
Dr. W. J. Todd, *Instructor in Pediatrics*
Dr. J. H. Traband, *Instructor in Pediatrics*
Dr. W. G. Geyer, *Instructor in Pediatrics*
Dr. W. E. Brent, *Instructor in Pediatrics*
Dr. Clarence E. Mackf, *Instructor in Pediatrics*

Assistants in Pediatrics

Dr. B. J. Ferry
Dr G. E. Wells
Dr. F S Orem
Dr. H. J. Dorf
Dr. G. A Knipp
Dr. J. J. McGarrell
Dr. H. A. Rutledge
Dr. Albert Jaffe
Dr. Marie M. Kovner
Dr. R. L. Hening
Dr. Meyer Ephriam
Dr. A. G. Webster

COURSE IN INFANT FEEDING

Daily Afternoons

(Limited to Eight Physicians)

This course is intended for the general practitioner and those especially interested in Pediatrics who desire in a short space of time to familiarize themselves with the newer advances in infant feeding. The physicians will work daily, under instruction, in the Babies' and Children's Clinic of the University Hospital, which, with a yearly attendance of over 20,000 patients, affords an unusual opportunity for the observation and treatment of a wide variety of cases. Daily Ward Talks in the University Hospital will be given, thus enabling physicians to observe the care and treatment in detail of nutritional conditions more severe in character. There will be lectures and quizzes three times weekly.

The course will cover the following subjects:

1. The underlying principles of modern infant feeding.
2. Feeding problems in nutritional conditions: marasmus, rickets pyloric stenosis, the diarrhoeas, etc.
3. Technique of infant feeding: care of the breasts: bottle feeding: preparation of food mixtures: gavage: subcutaneous salt and glucose solution: intraperitoneal salt solution: proctoclysis.

DEPARTMENT OF MEDICINE

GASTRO ENTEROLOGICAL CLINIC

Diagnosis of Diseases of the Gastro-intestinal Tract

Daily Afternoons

(Limited to Eight Physicians)

Dr. T. F. Leitz
Dr. J. H. Ullrich
Dr. T. H. Morrison
Dr. Maurice Feldman
Dr. Milford Levy
Dr. Joseph Sindler
Dr. Z. Morgan
Dr. L. J. Rosenthal
Dr. Waitman Zinn
Dr. Isadore Levy
Dr. W. S. S. Armstrong

The course will be conducted by means of:

1. Lectures and clinics on special topics.
2. Daily study of patients in the dispensaries and on the hospital wards.
3. Laboratory work.

Instructions will be offered in:

1. Methods of history recording in gastro-intestinal diseases.
2. Physical examination of the abdomen.
3. Passage of the stomach tube: test meals: gastric lavage: examination of the gastric contents.
4. Passage of the duodenal tube: drainage of the gall bladder and its significance: duodenal feeding.
5. Examination of the feces.
6. Fluoroscopic and rontgenographical examination of the gastro-intestinal tract. Interpretation.
7. Demonstrations of œsophagoscopy and proctoscopy.

DEPARTMENT OF MEDICINE

METHODS OF DIAGNOSIS AND TREATMENT IN NEPHRITIS, DIABETES AND OTHER METABOLIC DISORDERS

Dr. W. H. Smith
Dr. Reed Rockwood
Dr. H. M. Stein
Miss Miriam C. Connelly

The didactic portion of the course will include lectures upon the clinical and metabolic aspects of diabetes, nephritis, hyperthyroidism, etc.

The Metabolic Clinic of the Out-patient Department will be utilized to demonstrate the treatment of ambulant cases, and the Hospital wards will furnish examples of the more severe types. The essential laboratory methods involved in the diagnosis and treatment of these diseases will be taught in the laboratory of the University Hospital.

The calculation and actual preparation of diets will be taught and demonstrated in the Department of Dietetics.

DEPARTMENT OF SURGERY

Dr. Arthur M. Shipley
Dr. Henry J Walton — Dr Page Edmunds
Dr. Jos. W. Holland — Dr. Frank S. Lynn
Dr. C. Reid Edwards

SURGICAL DIAGNOSIS

Daily 9 A. M.—11:30 A. M.
(Limited to Eight Physicians)

This course will be devoted almost entirely to the diagnosis of surgical conditions. Considerable attention, however, will be paid to the treatment of fractures. Minor surgical procedures will be demonstrated, such as: aspirations of the chest, infusions, treatment of minor accident conditions, etc.

From nine to ten-thirty each morning, there will be ward rounds and operations. From ten-thirty to eleven-thirty, the routine treatment of minor surgical conditions in the surgical dispensary. There will be two clinics each week, on Tuesdays and Thursdays, at eleven-thirty.

Instruction will be given also in the use of the X-ray for the diagnosis of surgical conditions.

DEPARTMENT OF SURGERY

COURSE IN MALE AND FEMALE UROLOGY (Including Syphilis)

Daily Afternoons
(Limited to Six Physicians)

Dr. W. H. Toulson — Dr. J. M. Hundley Jr.
Dr. H. M. Robinson

This course will be given in the dispensaries and on the hospital wards. It will include practical work by the physicians under instruction, short lectures, demonstrations, and operative clinics. Instruction will be given in the technique of urethral injections, instillations, irrigations, catheterization, the use of sounds, filiforms and dilators. Darkfield examination for the treponema pallida, and the technique of intravenous therapy in syphilis will also be taught.

There will be demonstrations of urethroscopy, cystoscopy, catheterization of the ureters, lavage of the kidney pelvis, the use of wax tips and bulbs for the recognition of ureteral strictures and stones. The utilization of the above methods in the diagnosis and treatment of diseases of genito-urinary tract will be systematically presented.

DEPARTMENT OF SURGERY

DISEASES OF THE NOSE AND THROAT*

Dr. Edward A. Looper — Dr. W. F. Zinn
Dr. E. E. McKenzie — Dr. F. B. Anderson

Daily Afternoons

(Limited to Eight Physicians)

In lectures, clinics and dispensary classes there will be offered a brief review of the anatomy, pathology and bacteriology of the nose and throat and a systematic presentation of the fundamental clinical features of the common diseases of the paranasal sinuses, the pharynx, mouth and trachea. The use of the laryngoscope will be taught. Bronchoscopy and laryngoscopy will be demonstrated. The interpretation of X-ray plates will be discussed. The relationship of nose and throat infections to systemic disease will be presented in some detail, and the indications for the various nose and throat operations discussed.

*By special arrangement a portion of this course may be combined with a portion of the course in Nose and Throat to furnish a brief review of both subjects.

DEPARTMENT OF OPHTHALMOLOGY AND OTOLOGY

DISEASES OF THE EYE AND EAR*

Dr. Harry Friedenwald — Dr. Harvey Fleck
Dr. Randolph Kahn — Dr. J. W. Downey, Jr.
Dr. Joseph I. Kemler

Daily Afternoons

(Limited to Six Physicians)

This course will be given in the dispensary and on the wards of the University Hospital and in the Mercy Hospital. By the method of case teaching instruction will be given in the recognition and treatment of the commoner diseases of the eye and ear. The use of the ophthalmoscope will be taught and opportunities afforded for practice in its use. The relationship of diseases of the eye and ear to systemic diseases will be given special attention so that the diagnostic value of eye and ear examinations may be appreciated.

*By special arrangement a portion of this course may be combined with a portion of the course in Eye and Ear to furnish a brief review of both subjects.

COMBINED COURSE IN OBSTERICS AND GYNECOLOGY

(Limited to Eight Physicians)

DEPARTMENT OF GYNECOLOGY

Dr. J. M. H. Rowland — Dr. L. H. Douglas
Dr. D. P. Bowe — Dr. J. G. M. Reese
Dr. M. A. Novey

THE PRACTICE OF OBSTERICS

Monday, Wednesday, Friday—9 A. M.—11:30 A. M.

The course will be conducted almost entirely on the wards and in the dispensaries of the hospitals. Brief lectures will also be given. When illustrative cases are not available manikin demonstrations will be substituted.

The following topics will be systematically presented:

1. Normal and deformed pelves and foetal heads.
2. Abdominal palpation.
3. Diagnosis of pregnancy.
4. Pre-natal care.
5. Complications of pregnancy:
    1. Abortions
    2. Toxemias
    3. Hemorrhages, etc.
6. Mechanism of labor.
7. Conduct or normal labor and puerperium.
8. Care of new-born child.
9. Puerperal infection.
10. Operative obstetrics:
    1. Forceps
    2. Version and breech extraction.
    3. Craniotomy
    4. Induction of labor.

COMBINED COURSE IN OBSTERICS AND GYNECOLOGY
DEPARTMENT OF GYNECOLOGY

Dr. W. S. Gardner Dr. J. M. Hundley, Jr.
Dr. Hugh Brent

GYNECOLOGICAL DIAGNOSIS

Tuesday, Thursday, Saturday—9 A. M.—11:30 A. M.
Lectures—Pathology—Ward Walks—Operative Clinics

The following subjects will be reviewed, and illustrated, in as far as possible, by ward and dispensary cases, and by gross and microscopic pathology:

1. Case history recording.
2. Uterine bleeding.
3. Injuries due to labor.
4. Displacements of the uterus.
5. Extrauterine pregnancy.
6. Cancer of the uterus.
7. Uterine fibroids.
8. Infections of the pelvic organs.
9. Ovarian growths.
10. Gross and microscopic pathology of the pelvic organs.

LYMPH NODE ENLARGEMENT FROM THE VIEWPOINT OF THE PATHOLOGIST*

By Hugh R. Spencer, M. D.

The diagnostic study of diseases of lymphoid tissue offers many difficulties to clinician and pathologist alike, indeed this is not to be wondered at when one considers the following facts:

I—Lymph nodes as protective filters are subject to varied types of injury. In many instances, we, of course, recognize certain anatomical changes as a typical response to some specific etiological factor. Thus, a caseous or calcified node, which microscopically shows giant cells, endothelial cells and lymphocytes, is considered to have been the result of infection by the tubercle bacillus, just as the swollen, pus filled node, with its liquefaction necrosis and its horde of infiltrating leucocytes, indicates infection by the pyogenic cocci. On the other hand, however, there are many irritants, the natures of which are not clear; to some of these and to many of the known forms of injury, there is apparently no characteristic anatomical response; the picture is often that of a hyperplasia of the various elements of the node, so that in our present state of knowledge, we are forced to group many conditions of diverse etiology under the heading of "Hyperplasia of Lymphoid Tissue". Such designation is quite unsatisfactory, but there seems no method for the present at least, whereby the pathologist can indicate that this particular node for example, has drained a chronically infected tooth or that another node has responded to the injury brought about by the absorption of some inorganic poison.

II—There are at least three anatomical elements in the lymph node capable of giving response to injury—these are: the lymphocyte, the reticular cell and the endothelial cell of the pulp and sinuses.

To certain irritants there is a response on the part of but one type of cell, while to others there is a reaction on the part of all of the cell types.

III—It seems possible that there may be occasionally, a transformation from one process to another, so that in such cases the anatomical picture depends upon the stage of the condition studied.

IV—Lymphoid tissue is relatively mobile, and the lymphocytes are placed in easy access to the lymph and blood streams, so that in certain diseases of the lymphoid tissue, lymphocytes may flood the blood stream, while in other conditions they remain within the node.

As W. G. MacCallum has noted, this freeing of cells to the circulating blood or their retention at the site of their formation defies explanation, for it is impossible to see with the microscope anything which in one case would facilitate the escape of cells or in another prevent it. Certainly, the technique and methods at our command shed no light upon the subject.

*From the Department of Pathology, University of Maryland, School of Medicine

In spite of these difficulties, however, it is possible to recognize and to classify many diseases characterized by a generalized or group enlargement of the lymph nodes. For the purpose of such classification, the question of the existence or non-existence of a leukaemic state of the blood is of utmost importance, for as will be later pointed out, the clinical as well as the pathologic differentiation of certain types of disease is almost entirely dependent upon the cytologic examination of the blood.

Hence, with this fact in mind, the progressive changes in lymphoid tissue may be considered in two groups:

(a) Those diseases in which there is a co-existing leukaemia, such as lymphoid leukaemia, infectious mononucleosis, and leucosarcoma.

(b) Those diseases in which there is no leukaemia such as pseudo-leukaemia, lympho-sarcoma, Hodgkin's disease, tuberculosis and carcinomatous metastasis.

Of the first group, lymphoid leukaemia, a disease of obscure etiology, is probably the most important. The circulating blood contains great numbers of mononuclear cells, the lymphoblastic origin of which is shown by the absence of oxidase granules in the protoplasm of such cells when treated by the Schultze or other of the oxidase methods.

In either the acute or chronic form of the disease, the lesions are rather characteristic, and, except for extent and certain minor differences, are essentially the same. The process may start in one or more chains of lymph nodes, involving all nodes of the chain more or less simultaneously. Eventually all nodes throughout the body participate in the process. The lymph nodes become enlarged, remain discrete, and there is no tendency to invade the surrounding tissue. In the chronic form, particularly, large tumor-like masses of nodes may appear in the cervical, axillary and inguinal regions. Similar masses may be found in the mediastinum or in the retroperitoneal spaces. The individual nodes are large, soft, grayish white and homogenous in appearance, except in the acute form where hemorrhage is often noted.

The spleen is enlarged, though not to a maximum degree. There may be lymphoid infiltrations in liver, kidneys, adrenals, testicle and retinae, and the bone marrow is grayish and cellular in appearance. Histologically, the lymph nodes are altered, for there is an over-shadowing growth of lymphoid cells, the smaller type in the chronic form and a larger type in the acute form. The architecture of the node is lost, and the venules and sinuses are laden with lymphoid cells.

The second number of the group is a condition spoken of as infectious mononucleosis and apparently occurs as a part of a general infection. Clinically, there is moderate fever, a more or less generalized lymph node enlargement, and a lymphocytosis. Sooner or later the lymph nodes recede, and the blood picture returns to normal. This is an important point in the differential diagnosis, for it is at times extremely

difficult, if not impossible, to determine whether one is dealing with this disease or an early case of lymphoid leukaemia. Pathologically, the distribution of the swollen nodes is general, though involvement of the cervical, axillary and inguinal chains is most common. The nodes are uniformly soft, friable and grayish; they remain discrete. Histologically, the general architecture is preserved, the lymph cords are distinct and there is evidence of an active proliferation of the lymphoid and endothelial cells. Lymphocytes are often observed in the sinuses and venules.

The final member of the group is the leucosarcoma (Sternberg). This process is probably of a neoplastic character, arising locally and composed of lymphoid cells which readily escape into the blood stream. These tumor masses develop in bone, in the mediastinum, in the mammary gland, in the cervix uteri, about the dura mater of the brain or cord, or in the orbit.

They are rounded, or broad and flat, soft and cellular, and there is a definite destructive invasion into the neighboring tissues. The distant organs are often infiltrated by the tumor cells. Occasionally, tumors of this type, particularly those about the periosteum of the skull, contain a peculiar greenish pigment of undetermined origin. These tumors are known as chloromata. Microscopically, there is an active growth of fairly large invasive lymphoid cells. The architecture of the involved node or tissue is lost, and lymphoid cells may be found in the sinuses and venules.

Of the diseases in which there is no co-existing leukaemia, a condition described by Cohnheim and designated as pseudo-leukaemia might be first described. In this disease, there is an active hyperplasia of the lymphoid elements of the nodes, and, indeed, aside from the absence of lymphocytes in the sinuses and venules and the lack of infiltration in the various organs, the pathology of the condition closely simulates that of lymphoid leukaemia. Many authorities deny the existence of such a disease, while others look upon it as a quiescent stage of lymphoid leukaemia.

Lymphosarcoma (Kundrat) is a neoplastic growth, often arising from a single group of lymph nodes in the mediastinum or peritoneal cavity, or from lymphoid tracts, such as are seen in the pharynx or intestinal wall. These growths are usually limited to either the thoracic or abdominal cavity and actively invade the surrounding tissues. By extension they may involve the intestinal wall, adrenals, pancreas, mesenteric nodes, heart or lungs. The spleen, bone marrow and distant nodes are usually free. Microscopically, the growth is composed of small lymphoid cells, many of which show hyperchromatic nuclei, the cells are supported by a delicate reticulum.

These growths do not respect the capsule of the node, but actively invade and extend into the surrounding tissue. The growths are, therefore, usually large, firm and matted, and intimately associated with all surrounding structures.

Hodgkin's disease from a pathologic standpoint must be looked upon as a distinct entity and except for its tendency to produce a general enlargement of the lymph nodes, it bears no relation to the other diseases of the lymphatic system. Hodgkin originally described the disease which bears his name in 1832. Since that time the work of Sternberg, Reed, Zeigler and Longcope, and many others has added to our knowledge of the condition.

Sternberg long maintained that the disease was an atypical form of tuberculosis, but efforts constantly or commonly to find tubercle bacilli either by appropriate stains or by animal inoculation have been in vain.

Frankel has described certain gram positive bacilli. Bunting and Yates have found a diphtheroid bacillus which they think is the cause. More recently, Kofoid of the University of California has reported amoebea in the affected nodes. In no instance, however, has the exact role of any one of these organisms in the production of the disease been determined, yet we must believe with MacCallum and Ewing that Hodgkin's disease is an infectious process and that it should be classed with the infectious granulomata.

From the standpoint of gross pathology, the process begins usually in a regional group of nodes, commonly cervical, for it is not unusual to find in this region a group of loosely bound fibrous nodes which represent the original focus, while the nodes elsewhere represent early stages in the development of the same process.

The nodes commonly affected are the cervical, axillary, inguinal, bronchial, peritracheal, mediastinal, retroperitoneal, and the lymphoid tissue of the intestinal tract.

The spleen is commonly enlarged and shows involvement of its lymphoid tissue. There are often metastatic (?) nodules in such organs as the lungs. The nodes when examined individually or collectively are for the most part discrete, though late in the process they may be rather firmly matted together. They are rounded or oval, grayish, gelatinous or elastic, though in the more advanced stages, dry, opaque, yellowish or fibrous nodes are met with. Microscopic sections present a rather characteristic picture. There is a loss of the normal architecture. The cortical and medullary portions of the node cannot be separated, nor can the germinal centres or medullary cords be made out. Indeed, the tissue is relatively quite poor in lymphoid cells, and in place of these cells there are many larger paler cells with elongated and palely staining nuclei. These cells are placed in no particular order and are generally considered as proliferating reticular or endothelial cells. Many large cells with a rounded or slightly oval contour are noted. The protoplasm of these cells is rather clear, although it contains an occasional ragged strand. The nuclei of these cells vary in number from one to three or four. These nuclei are rounded, indented or lobed, and are found overlapping about the center of the cell. These are the giant cells described

by Dr. Dorothy Reed and commonly spoken of as the Dorothy Reed cell. Neutrophilic and eosinophilic leucocytes are often found in the nodes in the earlier stages.

As the process continues, the lymphoid and reticulo-endothelial cells disappear and are replaced by fibrous tissue, so that a diffuse fibrosis is the end result.

Concerning tuberculosis, little need be said except to indicate that the cervical, bronchial and mesenteric nodes are those most commonly affected. The nodes exist in matted masses, and there is little difficulty in recognizing the typical caseous, calcified or fibrous nodes of this disease. It must be remembered that in certain atypical tuberculous involvements of the lymph node, the histologic picture is essentially one of active lymphoid hyperplasia without the characteristic proliferative and necrotic stages usually seen in this condition. In such instances where tuberculosis is suspected, it is necessary to resort to appropriate staining methods or even to animal inoculation to determine the exact nature of the process.

With reference to lymph nodes invaded by metastasizing tumors, of which the epithelial are the most common, it might be said that they usually offer little difficulty. They are recognized through their relationship to primary growths and through their firmness. This is true as far as the relationship to primary growths goes, with the exception sometimes of carcinoma of the prostate or of the thyroid, or of small carcinomatous growths in the naso-pharynx or other regions of the throat. Here, sometimes, the enlarged invaded node appears before the primary growth can be clinically noted. Examination of such nodes usually gives conclusive evidence of the nature of the condition; one finds firm grayish or yellow cellular nodules situated within the node, while microscopic examination shows an active invasive epithelial growth.

Mindful, therefore, of the constant exposure of the tissue of the lymph node to all sorts of injuries and of the peculiar reaction to irritation and of the difficulties in the differential diagnosis of its various lesions, as brought about by this brief discussion, one can well appreciate the value, to the pathologist, of the observations of the clinician and surgeon. From them the pathologist must have data relative to the cytologic examination of the blood, he must be informed with regards the origin and distribution of the lesions, the duration of the condition, the character of the nodes, whether discrete, matted or invading, and above all he must be supplied with such material as will enable him to study the question of development, infiltration and invasion as applied to the lesions of the particular disease.

UROLOGICAL PROBLEMS IN GENERAL PRACTICE*

By Albert E. Goldstein, M. D., F. A. C. S.

Attending Genitourinary Surgeon, Hebrew Hospital and Mt. Pleasant Sanitorium; Instructor in the Department of Pathology, University of Maryland

Baltimore, Maryland

The close cooperation that exists between the doctor in general practice, the specialist, the hospital and the patient, places medicine on a better basis than it formerly has been, but still does not toe the proper mark.

No longer does the patient expect the physician to be informed in the entire domain of medicine, but encourages a consultation in difficult cases. With the gradual increase in consultative work, the specialist has continuously perfected himself so that he can meet the demands of the public as well as the physician. He has endeavored to teach the public as well as the family physician that incomplete examinations as well as delay in consultation of cases having obscure signs and symptoms may frequently lead to disastrous results to the patient and to embarrassment to the physician.

The physician in general practice is called upon any time of the day or night to examine and treat any type of case, whether in the old or young, male or female. It is to him that the public is indebted to for their health and lives, because he is the one who is first called. On the other hand this same physician has not stressed sufficiently in his examination and in other instances neglected certain features, causing a percentage of his patients to be treated unsatisfactorily and eventually to seek one of his colleagues.

Patients frequently present themselves for examination never suspecting a urological disease owing to the fact that their symptoms are referable to some other domain, such as the gastro-intestinal, neuro-muscular or cardiovascular system. Frequently, the simple procedure of a urinary analysis or digital examination of the rectum will diagnose a case that has been puzzling.

Young individuals who are exposed to the vices of the day, frequently contract acute gonorrheal infections which are frequently complicated by acute epididymitis or prostatitis. Symptoms arising from these conditions are numerous and are frequently referred to other parts of the body. An examination of the genitalia together with a digital examination of the rectum will avoid many erroneous diagnoses being made.

Likewise the man past middle age having urinary symptoms will be saved many a sleepless night or uncomfortable day and frequently

*From the Department of Urology, Hebrew Hospital.

his life if an early rectal examination will be made to determine if he is one of the 30% of men who is suffering from a prostatic hypertrophy. Frequently I hear the remark, "Suppose a rectal examination is made, it reveals nothing to me." My answer is, that there are only two alternatives, one to appear before any urological clinic and be taught the various types of prostates and the other to refer the patient to someone who can be of some assistance to him. Frequently the urologist have patients who have become dissatisfied, referred for examination by other patients or physicians. Which is a greater embarrassment, to have your patient discharge you and see one of your colleagues or to leave with your consent or instruction to seek one that is better qualified to handle the situation?

Fortunately most of us practicing medicine are possessed with two hands and as a rule four fingers and a thumb on each hand. If I can only impress that in addition to all the uses that one has for his fingers, that one of these fingers on either hand can render him a great deal of service by making a rectal examination on all patients, especially those complaining of urinary or rectal disturbances, I shall feel that I have accomplished a great deal. After it is all said and done it is an undoubted fact that this procedure is equally as important as feeling the pulse, looking at the tongue and listening to the heart. How frequently does one see patients with pus or blood or both in the urine or with definite urinary signs or symptoms or vague abdominal symptoms. Undoubtedly every physician has had cases of this type. The presence of these few signs and symptoms are and should be of great importance to the patient and the physician.

In a recent paper published by Dr. Harvey Beck and myself entitled "The Importance of Urological Diagnosis in Internal Medicine", some very important facts were brought out.

We were rather surprised at some of our compiled and accumulative figures. Inasmuch as this paper deals with a similar subject, the following is of interest.

Cases appearing at Dr. Beck's private clinic and presenting diagnostic difficulties requiring special urological investigations have only been included in the mentioned statistics and this comprised 7% of all cases that came to the clinic. While the general rule was not to examine every patient who came to the clinic from a urological standpoint, certain definite types of cases were investigated. For the purpose of discussion they were divided into two groups.

1. Patients having either definite urological signs, symptoms or both.
2. Patients having indefinite complaints not directly associated with the urogenital tract, in which a satisfactory diagnosis could not be made without a urologic study.

In the first group there were nine cases with definite urologic signs; fourteen cases with definite urologic symptoms; and thirty cases with both signs and symptoms.

In the second group (the important group) there were twenty-four

cases in which definite pathological lesions were found in the urinary tract. The symptoms were referred to the gastro-intestinal, neuro-mascular, cardio-vascular, and endocrin systems.

Urinary retention a condition that is so frequently encountered with in men past middle life, but also occurring in young men should be most carefully investigated. These cases usually are seen first by the general physician.

A review of the chief causes of urinary retention therefore is in order.

1. Prostatic hypertrophy.
2. Urethral stricture.
3. Tabes dorsalis.
4. Acute posterior gonorrheal urethritis.
5. Vesicle calculus or neoplasm.

The question of differential diagnosis is of great importance. The age of the patient, the history of an exposure, the history of a past venereal infection either of the neisserrian or leutuc type, the presence or absence of a discharge, urinary symptoms, rectal examination and catheterization of the bladder, etc., aids most remarkably in coming to some conclusion. After one has exhausted these means then he is no longer responsible, providing the patient is referred immediately to the proper department. The man in general practice can examine this far, but unless he has had special training he cannot carry the examination any further. It now remains for the specialist to make use of special instruments as bougies, sounds, special catheters, and cystoscopes to determine the diagnosis and in the largest percentages of cases a final diagnosis is made.

Particularly in prostatic cases would I like to sound a warning against repeated catheterization of the bladder. Advanced age and as a rule other physical deformities of age should not be sufficient reason for frequent catheterization of the bladder, nor sufficient reason for delayed cystoscopic examination without first seeking the advice of a urologist.

This is made possible by the easy access that one has to both free and private urological clinics.

Frequency of urination is a common symptom complained of by both male and female, in the young and old. While frequently it is encountered in a nervous individual it should not be ascribed to this condition at all times. In the female aside from the various pelvic conditions that may give rise to this symptom, other common conditions such as urethral caruncles, urethral strictures, tuberculosis of the bladder and kidney as well as a vesicle calculus or tumor is a common cause. In the male acute and some chronic gonorrheal conditions of the urethra and prostate as well as urethral strictures, prostatic hypertrophy, tuberculosis of the bladder and kidney, vesicle calculi and tumors may be the cause.

In most instances of the above, the frequency is usually accompanied by the presence of pus or microscopic blood in the urine. Again it

should be the duty of the practising physician to have the cause determined and then treat the patient accordingly.

Returning now to the question of blood and pus in the urine whether it be macroscopic or microscopic.

Every case with either microscopic or macroscopic blood in the urine whether it be male or female, young or old, should either be urethroscoped or cystoscoped or both, and should be performed without a great deal of delay.

The frequency with which haematuria is encountered is very great, and peculiar enough when it makes its presence in the urine, some pathology is present in the urinary tract in about 98% of the cases.

The most common types of lesions in the urinary tract which may cause blood to be found in the urine are as follows: Bladder and renal neoplasms, vesicle, ureteral and renal calculi, prostatic hypertrophy, tuberculosis of the kidney and bladder and ureteral strictures. Some of the uncommon types of lesions are the nephritic and some urethral lesions; also some caused by drugs.

A painless, spontaneous, free haematuria with irregular shaped clots is usually significant of a bladder tumor. The same applies as a rule, to renal neoplasms excepting that there may be an absence of clots or if they are present they may be accompanied by a ureteral colic. In the haematuria of vesicle, ureteral and renal calculi the haematuria is not free and in most instances may only be microscopic. In the haematuria of vesicle calculi, urinary symptoms will be a marked factor while in the renal and ureteral calculi, colic will frequently accompany the presence of blood in the urine. The same holds true in tuberculosis of the kidney and ureteral stricture.

In my opinion it is rather useless to endeavor to check urinary bleeding with drugs as I candidly believe that no drug ever checks bleeding in the urinary tract. Furthermore, if there is such a drug, then it certainly should not be administered. My reason for stating this is that every time bleeding is checked the important signs are being masked, the pathology is gradually increasing and there is an unnecessary delay in that essential procedure, cystoscopy. A delay here of a few weeks frequently results in the delay being too long, making operable cases inoperable or good risks poor ones. I therefore wish to sound my second warning against delay in urethroscopy and cystoscopy in cases of haematuria. The case which may seem the worst risk may result in the best. Practically the same rule holds good for the presence of pus in the urine.

Endoscopy and cystoscopy are very important procedures and so simple are they performed today by the urologist, painless with the use of caudal (not spinal) anaesthesia, that there is no excuse whatsoever for it not being performed early, excepting in young children. If their symptoms remain persistent then they likewise, should be cystoscoped. With the aid of the cystoscope, ureteral catheterization, functional tests and ureteropyelography, the various types of lesions

which may cause pus in the urine can be differentiated. These may include tuberculosis of the kidney, ordinary pyogenic infections of the kidneys, renal, ureteral and vesicle calculi, ureteral stricture, etc.

It is the above mentioned lesions that are found daily in general practise, a clue only to be obtained by the general practitioner by an examination of the urine, frequently to be definitely diagnosed by the urologist. In the female a catheterized specimen of urine should be examined if pus is present.

A third warning I wish to send out is, that too much reliance should not be placed on the plain X-ray report of the urinary tract, especially the negative report. By plain X-ray I mean a roentogram of the bladder, ureters and kidneys without the injection of an opaque solution.

Renal and vesicle tumors are not demonstrable in X-ray, without the injection of air or an opaque solution. Likewise the rays do not penetrate certain salts as uric acid and urates. Only 80 or 90% of vesicle, 60 or 70% of ureteral and 75 or 80% of renal calculi are radiable. It, therefore, remains for the urologist to diagnose the difference.

Again, ureteral strictures can only be demonstrated by ureterograms and the ureteral catheter with a bulb, so that a plain X-ray would not be of any special benefit.

Pain, the symptom which frequently causes the patient to seek the attention of the physician may be mild or severe, intermittent or constant, sharp or dull, localized or radiating and may be the only symptom or accompanied by other symptoms. When it is severe and of the colicy type, hypodermics of morphia are usually necessary.

If in doubt as to the cause, irrespective of its location in the abdomen, back, perineum, scrotum or urethra no harm will be done and much good if a careful urological examination will be considered. The delay in the examination may result in the loss of a patient and the seeking of relief from a colleague.

The occurrence of a renal colic eased by a narcotic not to return for a long period of time does not mean that the patient is well but possible that there is a destructive process going on in the formation of a larger stricture of the ureter or an increase in the size of a ureteral or renal calculus, eventually to cause a damming back of urine with a subsequent hydronephrosis and then a pus kidney. All of the above conditions can result in some process going on in the ureter or kidney following an initial kidney colic. Because an individual passes a ureteral calculus following an attack of colic does not necessarily mean that the patient is well or that a recurrence will not take place. A careful study of the ureters and kidneys of that patient as well as the teeth, tonsils and sinuses is absolutely essential.

Cystitis and pyelitis are two conditions that are treated more freely than any other condition without any definite basis, for the treatment. It is rare to have either condition as a primary one, yet how frequently are patients treated by internal medication without seeking the

primary source or the cause of cystitis or pyelitis. Cystitis may be secondary to a bladder stone or tumor, to a urethral stricture or enlarged prostate, large fibroids or tuberculosis of the bladder and kidney, etc., while pyelitis may be secondary to a ureteral stone, stricture, renal stone or tumor, tuberculosis, or focal infections. Without determining the primary cause the man in general practise is handicapped and will never obtain results in these cases. One might state almost without reservation that the final diagnosis and outlining and treatment of urological conditions should be left to the urologist who is best equipped to handle the situation.

CONCLUSIONS

1. That the physician in general practice should at all times be on the lookout for urogenital diseases, especially in obscure cases.
2. A systematic routine procedure of rectal and urethal examination, also of examining the urine microscopically in all cases should be made.
3. Urethroscopy and cystoscopy should not be delayed in cases of pyuria, haematuria or cases with obscure abdominal or renal symptoms.
4. That there is a great need for closer cooperation between the physician in general practice and the urologist.

330 N. Charles Street

NOTE ON THE DISCOVERY AND FIRST USE OF THE STOMACH TUBE BY AN AMERICAN PHYSICIAN*

By Julius Friedenwald, M. D.

It is generally believed that two English surgeons, Jukes and Bush, are the inventors of the stomach tube. This claim is based on an article published by Jukes in the London Medical Repository of 1822, an abstract of which is found in the American Medical Recorder of 1823, entitled:

"*Description of an apparatus for removing poisons from the Stomach, invented by Mr. Jukes, surgeon.*"

"We might with justice be considered to be forgetful of the duty we owe the profession, were we to fail in laying before them a description of a very excellent apparatus which Mr. Jukes, its very ingenious inventor, favored us with a sight of. It consists of an elastic gum tube, a quarter of an inch in diameter, and two feet and a half in length, terminating at one extremity in a small globe of ivory, with several perforations; the other extremity is adapted either by screw or by plug (the latter is preferable), to an elastic bottle of sufficient size to contain at least a quart of liquid, and having a stop-cock fitted to it, in a similar manner as in the hydrocele bottle. Instead of the bottle, a pewter syringe, of an equal capacity, may be adapted, in the same manner, to the flexible tube. The operation by the syringe is performed more quickly, and may therefore, perhaps, be preferred by some. In cases where surgeons have neither bottle nor syringe, the tube alone might be made to answer the purpose, if the operator apply his mouth to the extremity, and thereby institute the office of a siphon."

"Application—The patient ought to be placed on the left side, and the globulated end of the tube be then carefully passed to the greater curvature of the stomach, either through the mouth or nostril, as may be thought proper. Having previously filled the bottle or syringe with warm water, at the temperature of 150°, screw or plug it to the tube, turn the stop-cock, and gently force the contents into the stomach. The then diluted contents are to be immediately withdrawn by pulling up the piston; or, if the bottle be applied, the same effect will ensue from its elasticity enabling it to recover its original form, by which the fluid contents will return, charged with the poison. This operation ought to be repeated, till the water, which is withdrawn, becomes clear and tasteless."

"In Mr. Jukes' Experiments, first on dogs, and then on himself and others, assisted by Mr. James Scott, Surgeon in Westminster, the apparatus was proved fully to answer the intended purpose. In these experiments, Mr. Jukes swallowed, first, two drachms of laudanum; he afterwards gradually increased the quantity, until it reached ten drachms; since which, he has administered to several individuals (one of them a female) one ounce of laudanum, with an equally successful result. The utility of so well contrived an instrument, arising especially from its being equally adapted to the removal of all the more bulky poisons, must be evident to everyone. We consider that Mr. Jukes has rendered an essential service to the profession, and to the community, by its invention."

That credit of this discovery is due Dr. Physick there can be no doubt. Physick published his original paper October, 1812, in The Eclectic Repertory, Vol. III, page 111 under the title of "Account of a New Mode of Extracting Poisonous Substances from the Stomach. By Philip S. Physick, M. D., Professor of Surgery in the University of Pennsylvania," which is ten years prior to the appearance of Jukes' article. The paper reads thus:

*Reprinted from the Johns Hopkins Hospital Bulletin, Vol. XIV, No. 150, September, 1903.

"On Thursday 6th June, 1812, I was sent for in much haste at nine o'clock in the evening, to visit two children of Mr. S. B. each three months old. They were twins, and had been affected with whooping cough for several weeks. The mother informed me that in consequence of her children having been very restless the night before, she had this evening given them some laudanum. To William she had given one drop at seven o'clock, and the same dose to Edmund forty minutes afterwards."

"I found William in a state of stupor or very profound sleep, from which he could not be roused, and was informed, that just before my arrival, his whole body had been strongly convulsed; his breathing was laborous and his pulse feeble and slow. On inquiry, I found that vial out of which the drop of laudanum had been given, had contained, several weeks before, nearly one ounce of that medicine, but having been left without a cork, it had dried away so much that one drop only could be obtained for William; in order to procure another drop, two drops of water had been put into the vial and stirred about, by which another drop had been obtained and given to Edmund, forty minutes having intervened between the two doses."

"About a quarter of an hour before my visit, the mother had given to William fifteen drops of antimonial wine, but as it had produced no effect I prescribed an emetic of ipecacuanha, and directed it to be given immediately; this, however, was found impracticable, as the child was incapable of swallowing."

"At half past nine o'clock, Edmund, who had appeared to be in a very easy sleep, became convulsed, and his pulse and breathing were affected in the same way that his brother's had been. We attempted to give him ipecacuanha, but could not make him swallow it. The countenance of the children became livid—their breathing laborous; with long intervals between the times of each inspiration, and the pulse in each very feeble."

"Under these circumstances it clearly appeared no time was to be lost, and therefore, as they could not swallow anything, I determined to inject an emetic into their stomachs. For this purpose a large flexible catheter was passed through the mouth down the esophagus into the stomach, and through this, one drachm of ipecacuanha mixed with water was quickly injected by means of a common pewter syringe. In hopes that the emetic would operate, I waited some time without any effect being produced. William exhibited now every symptom of speedy dissolution,—his face became very livid,—his pulse and respiration had almost ceased; and indeed the pulse could not be perceived, except a faint stroke or two, after that kind of imperfect and convulsive inspiration which is commonly observed in children just before actual death, accompanied with a convulsed action of the muscles of the mouth and neck. In this situation I passed the catheter again, and by applying the syringe to its projecting end, drew up the fluid contents of the stomach, and immediately injected warm water which was again withdrawn. These operations were alternated two or three times, but when completed no sign of life remained. Hopeless as the case now appeared, I injected some spirit and water mixed with a little vinegar through the catheter;—in less than one minute the child again inspired, the pulse became perceptible at the wrist, and in four minutes, with the aid of external stimuli, both went on so perfectly that there was every reason to believe the child would recover. By the time that these operations were performed on William, Edmund was observed to have passed into the same condition of apparent death, from which his brother has just recovered. The same measures were adopted in his case, and with the same happy effect. I now flattered myself that the children would do well, but in this expectation I was disappointed. In about half an hour, Edmund's breathing became very slow and laborous, and his pulse which had before been very much excited became so feeble, that he appeared to be sinking very fast. Supposing that the effects observed, might be produced by the spirit which had been given occasioning intoxication, I determined to extract it from the stomach and to inject warm water, removing it again. This operation was quickly performed, but at the conclusion of it I was much distressed by seeing the little patient to all appearance lifeless. Observing in this case, that the actions of life ceased so immediately after the extraction of the spirit, I determined to try it again, and injected a little weak brandy and water. In less than a minute this occasioned a repetition of breathing and of the action of the heart, and in about five minutes both were regularly performed. The symptoms of ebriety took place also in William, but observing that

his brother had been nearly lost by extracting the spirit from his stomach, I did not attempt the removal of it in William's case. Doctor Austin who kindly assisted me on this occasion, remained all night with my patients. He informeed me, that after some time they became better, through the night. Their bowels were moved several times by castor oil. After five o'clock in the morning Edmund had no convulsions, but they continued with William until twenty-five minutes after nine, when he struggled a little, sighed and expired. Edmund was troubled for two or three days with a diarrhea but soon recovered completely."

"The idea of washing out the stomach with a syringe and tube, in cases where large quantities of laudanum or other poisons had been swallowed, occurred to me at least twelve years ago, and I have constantly, for many years, recommended it in my lectures. In the year 1809, Dr. Dorsey performed the operation of washing out the stomach in such a case, but the patient had taken the poison twelve hours before he was called, so that he did not succeed."

Of interest in this connection is a letter published by Physick in the same volume of The Eclectic Repertory, page 380.

"To the Editors of the Repertory.

"When I sent you the communication published in the first number of the third volume of the Eclectic Repertory, descriptive of what I supposed a new method of extracting poisons from the stomach, I was influenced by a desire to propose to my medical brethren a method of treatment which might preserve the lives of many unhappy persons who either by design or accident had swallowed large doses of laudanum or other poisonous substances. If in a single instance I had been instrumental in preventing death, I should have considered myself very happy; and to have withheld a communication which might have been attended with such beneficial effects, would have been in every respect unjustifiable."

"I have the pleasure of announcing to you and to your readers, that in several instances which have recently occurred in this city, the practice has been completely successful. In two cases treated by Dr. Dorsey, in which large quantities of laudanum had been taken, there is great reason to believe that no other mode of treatment would have succeeded in preventing the fatal event. Both patients were saved by injecting warm water into their stomachs, and extracting it again, together with the laudanum, by means of a syringe. I therefore am happy in having called the attention of the profession to a mode of treatment not before used in this country, at least within my knowledge; but I have now an act of justice to perform, in ascribing the merit of the invention to Doctor Alexander Monro, junior, of Edinburgh, who published it in his inaugural thesis, in A. D. 1797. Of this circumstance I was entirely ignorant when I sent you my paper, and probably should still have remained so, had it not been mentioned in his book of Morbid Anatomy, a work which has but very lately come into my hands."

PHILIP SYNG PHYSICK.,

Philadelphia, 20th January, 1813.

That the credit of this invention is due Physick is also shown by Mathews in the Medical Recorder, Vol. X, 1826, page 325, in an article entitled, "Description of an Improved Instrument, for Extracting Poison from the Stomach; with some Statements Tending to Establish the Validity of Dr. Physick's Title to the Credit of having Invented the Stomach Tube."

"It appears that Dr. Alexander Monro, Jr., in his inaugural thesis, published 1797, suggests the use of a tube and syringe, as a suitable means for extracting poison from the stomach, it does not appear, however, that he ever employed them. About that period, the same plan occurred to Dr. Physick, without having met with the suggestion of Dr. Monro, to whom, however, he subsequently yielded the merit of having made this plan public previous to himself. In the year 1800, Dr.

Physick was called to the surgical chair in the University of Pennsylvania, and continued, from that time forward, to inculcate this among other useful inventions with which he has enriched our art, to numerous classes of students, who now constitute a considerable portion of the physicians throughout the union; in proof of this we annex the following certificates, obtained from highly respectable practitioners of this city on another occasion, in order to support Dr. Physick's claim against that of Dr. Thomas Ewell, of the city of Washington, who had the justice to publicly acknowledge Dr. Physick's title upon perusing them. His claim was grounded on his having published, in the Medical Repository, of New York, in the year 1808, a paper 'containing a proposition to relieve the stomach from poison by the use of a catheter.'"

No. 1

"I do hereby certify, that in the years 1802, 3 and 4, I attended Dr. Physick's lectures upon surgery, and heard him recommend the introduction of a tube into the stomach, in cases where poisonous substances had been taken, through which tube, fluid might be injected by a syringe and extracted again; thereby enabling the practitioner to remove such noxious substances from that organ.

Signed, Philadelphia, June, 1820.

Isaac Cleaver."

"Ido hereby certify, that I attended Dr. P. S. Physick's lectures on surgery, in the years 1805, 6 and 7, that, in these lectures, the Doctor exhibited a tube coated with elastic gum, brought by Dr. Dorsey from Paris, and made there by Dr. Physick's order, long enough to reach from the mouth into the stomach. With such a tube, Dr. Physick advised to inject water or other fluids into the stomach, and draw them back again by the aid of a syringe, in cases where laudanum or other poisons had been swallowed, and thereby to work them out of the stomach and introduce counter agents.

Signed, Philadelphia, June 1820,

John D. Thomas."

No. 3.

"I remember that, in the winter of 1808-9, Dr. Physick informed me that he had an elastic tube, brought from Europe by Dr. Dorsey, for the purpose of injecting fluid into the stomach, and drawing it out again, in order to wash out poisonous substances, such as opium, etc.

Signed, Philadelphia, June, 1820.

Benjamin S. Jenny."

"In the year 1803, Dr. Dorsey was in Paris, and had made, by Dr. Physick's order, a tube of the kind now generally used, constituted of the same materials as the French catheter, and resembling it, except in size. That the use for which it was designed was unknown in Paris previous to that period, is evident from a letter from Dr. Dorsey to Dr. Physick, dated 1803, and now in the possession of the latter, in which he states that the makers were curious to know what was the intention of so large a catheter. It was not long before they ascertained the point, and tubes have been since regularly imported from there, for the supply of physicians in the United States."

"In the year 1809, Dr. Dorsey employed the instrument, but unsuccessfully, as the patient died, owing to twelve hours having elapsed before his arrival. In 1812, Dr. Physick had an opportunity of employing it in a case of twins, to whom the parent had given too much laudanum, one of them died, the other recovered. This case was published in the Eclectic Repertory for October, 1812, and has been republished in the second number of the Medical Recorder for 1823. Since that period, it has proved successful in a great many instances, and has become so common a mode of removing poison from the stomach that almost every physician, even in the country, is furnished with a tube and syringe for that purpose.

"With a knowledge of the foregoing facts, our surprise may readily be conceived, when we heard of the invention being announced in the London Medical Repository for October, 1822, as of recent origin, and claimed for Mr. Jukes, of Westminster. And, also, in the London Medical and Physical Journal, for that year, a description of his method by himself, and another modification by Mr. F. Bush, surgeon of Frome,

who also claims the honor of the invention. Mr. Bush's model, is the same as that invented by Dr. Physick, nineteen years before; namely, a tube and syringe. That of Mr. Jukes differs in having an elastic gum bottle, to supply the place of the syringe, which we think no improvement; and his tubes are furnished at the end with an ivory ball perforated with holes, which will be found rather disadvantageous than otherwise, more especially as it is often necessary to pass the instrument through the nose into the stomach, in consequence of the patient proving refractory, and holding the mouth firmly closed, which would be impossible with the ivory ball affixed."

"From the foregoing statement, it will be admitted by every candid individual, that the merit of the invention, is strictly due to Dr. Physick. It will also be perceived, that he was the first to carry it into successful operation."

Dr. Saml. Jackson corroborates this statement in an article in the American Medical Recorder, 1823, referring to Mr. Jukes' work he says:

"Whether the early volumes of the Eclectic Repertory ever reached the metropolis of England is rendered doubtful since we find, from the last numbers of the Medical Recorder and of the Journal of Foreign Medical Science, that some of the writers of that city have claimed the invention of a new method of washing and extracting poisons from the stomach, by means of a tube and syringe, for their fellow citizen Mr. Jukes. 'We might with justice', say they, 'be considered as forgetful of the duty we owe the profession, were we to fail in laying before them a description of a very excellent apparatus which Mr. Jukes, its very ingenious inventor, favored us with a sight of,'"

"We are entirely willing to grant Mr. Jukes all the credit the journalists would claim for him or he claim himself, as the same thought might have occurred to many ingenious men, who were seriously engaged in relieving the distresses of suffering humanity. But the priority of discovery and the demonstration of its greatest utility must certainly be awarded to our countryman, Dr. Physick.

"I well remember the satisfaction that Dr. Physick's operation afforded in Philadelphia, and that the invention of it was cordially ascribed to himself. But now, after a lapse of ten years, we find it claimed by the editors of the London Medical Repository for Mr. Jukes, surgeon in Westminster. How much I was surprised in reading their account of it when, at the same time, I could look over my shoulder to the box containing a large syringe with Dr. Physick's elastic tube, two feet long and a half inch in diameter, an apparatus that has occupied that station for the last nine years. It is true that our American tubes are not tipt with an ivory globe, an addition which I cannot but consider as wholly useless."

There can be no doubt from the foregoing that Dr. Physick used the tube as early as 1800 and that he recommended it for many years in his lectures to his students; that by his advice his nephew Dorsey had stomach tubes made in Paris as early as 1803 and employed the tube successfully in a poisoning case in 1809; and that in 1812 Physick published the report of successful results with its use in cases of poisoning. The work of Jukes first appeared in 1823; there can therefore be no doubt but that Physick was the inventor of the stomach tube and was the first to make practical application of this instrument

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(Note—The reference made by Dr. Physick and others to the invention of the stomach tube by Alexander Monro, Jr., refers to Monro's Inaugural Thesis, published in 1799. Monro merely suggests the use of the tube in cases of poisoning for the extraction of the poison fron the stomach and for the introduction of food into the stomach in cases of dysphagia and for extracting gases and food from the stomach in case of gastric fermentation in cattle. He does not point out, however, that any practical application of the tube was made in cases of poisoning.)

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

ARCHIBALD CUNNINGHAM HARRISON

Born near Richmond, Virginia, January sixth, 1864, Dr. Harrison was fortunate in his parents and lineage, but unfortunate in the time and location of his birth. On his father's side he was descended from a long line of distinguished ancestors, including Benjamin Harrison, Councillor—Robert ("King") Carter—Archibald Cary and the original William Randolph. His mother was the daughter of Benjamin Watkins Leigh, noted lawyer and political figure of his time and Julia Wickham, granddaughter of John Wickham the lawyer who defended Aaron Burr.

Dr. Harrison's father was Dr. Thomas Randolph Harrison, a physician of varied knowledge, great resource and with many of the characteristics later seen in his distinguished son. Though a country doctor without facilities, he was remarkably successful in surgery and it was his enthusiasm and success that influenced the son to be a surgeon. The son also inherited the father's love for natural history.

Julia Wickham Leigh, his mother, was a woman of fine force of character and known for her large fund of information, the result of unusually wide reading.

Born while his mother was a refugee during the last year of the Civil War, Dr. Harrison's early years were spent in the straightened circumstances of the reconstruction period. In consequence, his early school advantages were meager. He attended first a little log cabin public school and later a small private school near his home in New Kent County. Later he had one year in a boarding school in Winchester, Kentucky, and a year at Hanover Academy, Virginia.

Having decided to study medicine, Dr. Harrison entered the University of Virginia in 1884; taking one year there and the last two years at the University of Maryland, graduating in 1887. Upon graduation, he was appointed interne at Bay View Hospital (now The City Hospitals) and when the Johns Hopkins Medical School opened, he worked for a short time under Dr. Halsted. Though this connection was brief, it aroused in him an admiration for Dr. Halsted and his work, that constantly increased and was a constant inspiration.

Feeling that he had to obtain a living wage quicker than he saw opportunity of doing in Baltimore, in 1890 he went to Meyersdale, Pennsylvania and did general practice there until 1898. During this period, he did all the surgery that came to his hand, but with a constant desire to get back to Baltimore and a larger field with greater opportunities for development. Finally the temptation could be withstood no longer and he returned to start afresh at the age of thirty-four. In 1892, Dr. Harrison married Anna Warfield, daughter of Dr. and Mrs. Milton Welch Warfield of Howard County, Maryland. By this marriage, there were three daughters. The relationship that existed in this happy family was an ideal one. In the working world, his hands were not always gloved, but in his home, he was the ultimate in gentleness, consideration and good humor.

Promptly after his return to Baltimore, Dr. Harrison took up the study of anatomy and night after night worked in the dissecting room at the College of Physicians and Surgeons until two or three o'clock in the morning. His industry and his knowledge of anatomy soon obtained for him the position of an assistant Demonstrator, and in a few years it was recognized that he had mastered anatomy as few surgeons do.

In 1901 he was made Demonstrator of Anatomy and in 1902 was put upon the Visiting Staff of Surgeons to Mercy and Bay View Hospitals; thus giving him also some clinical opportunities. In 1903, he was made Associate Professor and Demonstrator of Anatomy and in 1907, Associate Professor of Surgery and Anatomy. In 1908, he was made Professor of Anatomy and Clinical Surgery and in 1913, Professor of Surgery. In 1915, The College of Physicians and Surgeons combined with the University of Maryland and he retained his last title until his death. In 1908, he was made a Visiting Surgeon to St. Joseph's Hospital and after this, there followed appointments to the Staffs of The Church Home and Infirmary, The Hospital for the Women of Maryland, the Baltimore Eye, Ear and Throat Hospital, The South Baltimore General Hospital and others.

Dr. Harrison was peculiarily fitted by nature to be a surgeon. His appearance, his calmness, his carefulness, thoroughness, resource, courage and judgment were a foundation upon which he built by hard work, careful preparation and deep thought.

The excellent courses given in the primary subjects of medicine at the University of Virginia, particularly in anatomy, the clinical work he saw at the University of Maryland and Bay View, the miscellaneous work he had in general practice, his training in the dissecting room, the clinical facilities he was given, were all made the most of and were seed sown upon fertile soil; so that when his larger opportunity came, it found him prepared with an excellent ground work.

Dr. Harrison's knowledge of anatomy plus his calm deliberate manner of operating and his perfect techinque, enabled him to do surgery with a precision and exactness rarely equalled. The ordinary

operations that he did repeatedly were done splendidly—one feels like saying perfectly—but it was in the extraordinary procedures that he shone most brilliantly. Given a condition, for which no definite operative procedure was described, he took pleasure in thinking out a method and line of approach and would carry through the operation, nearly always, just as he had planned it. In his vigorous years, he seemed to revel in difficult operations and particularly in those requiring careful anatomical dissection.

Dr. Harrison had, in a remarkable degree, the power to separate the wheat from the chaff in surgical measures and could almost unfailingly pick out among the new suggestions, the ones that would last and the ones that would be discarded. He was not a research worker, but his ability to sift confusing and complex evidence and to arrive at a clear, concrete verdict was well known and his advice and judgment were constantly sought by surgeons and practitioners and frequently by lawyers who had medico-legal problems. By a large group of younger men, he was consulted frequently and freely regarding all manner of problems and his advice was always logical and clear. As in the home, so with his patients, he was gentleness itself—particularly with women and children and the very ill, but woe to the man who was a coward or a malingerer!

The achievements of Dr. Harrison are the more to be admired when it is realized that his surgical career was really a short one. He returned to Baltimore in 1898. It necessarily took him a few years to obtain a foot hold and his work, like many others, was seriously interrupted in 1917. After his return in 1918, he accomplished a great deal, but he knew his cardiac condition had to be favored and he did not exert himself as he had previously done.

The period of 1906 to 1917 was the flood tide of his career. During this time, he accomplished an enormous amount of work, but no matter how rushed he was, how many operations he had posted, each one had to be done as precisely as if that were the only thing to be done that day.

In addition to his large private practice, he had become surgeon to the Pennsylvania Railroad, the United Railways and Electric Company, the Baltimore and Ohio Railroad and other corporations. Though it was always difficult to persuade him to write, in these years, he appeared rather frequently before medical organizations and in 1906, was elected President of the Baltimore City Medical Society and in 1913 was made President of the Medical and Chirurgical Faculty of Maryland.

When America entered the war, Dr. Harrison promptly offered his services by going to Washington and asking to be allowed to organize a small mobile unit of some type. This offer was refused and the refusal led him to make some statements to the then Chief of the Red Cross that made the writer, who was present, feel rather uneasy, but apparently no offense was taken for he was urged to organize a

Base Hospital which he, at the time, thought could not be done.

It is another instance of the clearness of his judgment that the type of unit he wanted to organize was eventually found to be essential and Base Hospitals were largely broken up to form such teams.

Later, the University of Maryland Unit was organized as Base Hospital No. 42 with Dr. Harrison as Director. At this time, he was given the rank of Major, later he was made a Lieutenant Colonel and after the war he entered the Reserve as a Colonel. Organizing and commanding the Base Hospital No. 42 and doing such excellent work abroad was considered by his friends as being an outstanding accomplishment, but he rarely referred to it and never once mentioned any hardships or stress that he must have undergone. When he found himself in failing health, he never intimated that the war had anything to do with it, except to say he thought an attack of influenza, suffered while in France, had done him harm.

After he returned to this country, he received a Citation from General Pershing for "especially meritorious and conspicious service at Base Hospital No. 42, France."

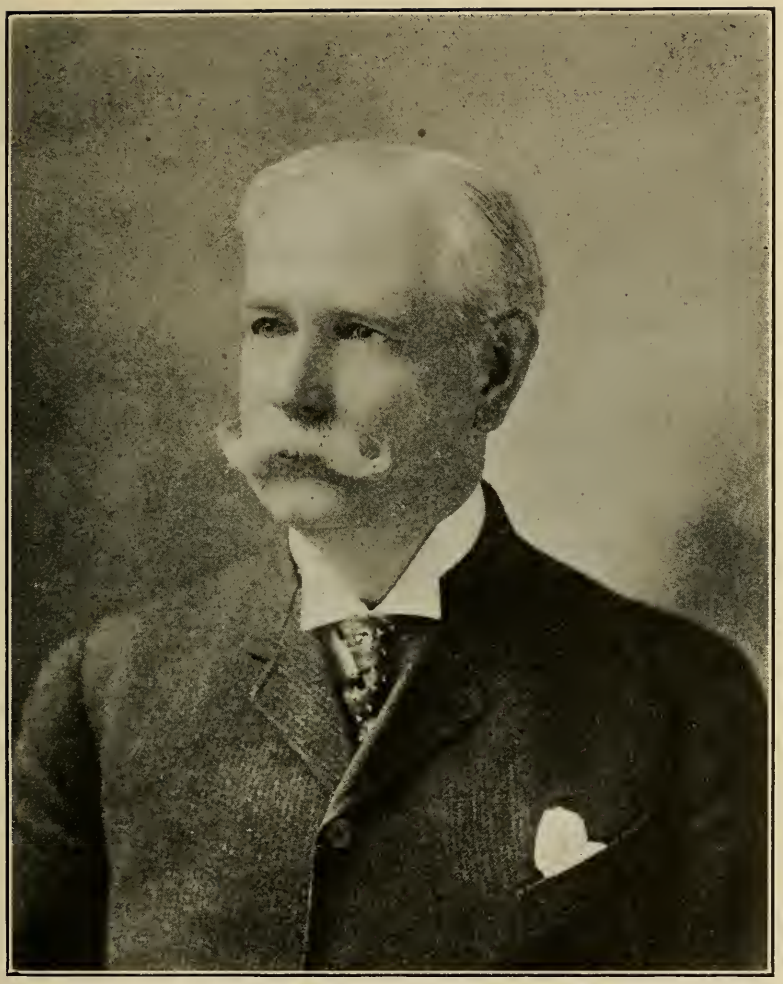
Dr. Harrison was a strikingly handsome man, of a large upstanding figure and a commanding presence. In his youth and early manhood, he was very athletic, being a good swimmer, a crack shot and so successful in ameteur baseball that he was offered a position on a professional team. Possessing a keen sense of humor, being quick at repartee, a good story teller and having a great fund of accurate information, made him a most entertaining and instructive conversationalist. He was a great lover of nature and no recreation was so pleasing to him as roaming through the woods or fields, observing the birds, trees, and animals about which he knew so much.

Though always having the desire for it, extensive general reading was to a large extent denied him in the years when he was developing himself as a surgeon, but in later years, this pleasure came to him in full measure. He read discriminatingly and in the same manner that he had read surgery, slowly, carefully, with deep insight and by no means always accepting the author's conclusions.

His father, having lived to the age of 81 and his mother to the age of 87, the life expectency of Dr. Harrison should have been more than the allotted three score years and ten, but his tragic death occurred a few days after the completion of his sixty-second year. In his passing, his immediate family and large family connection lost their idol. The surgical profession lost a clear thinker, a lucid teacher, a master surgeon.

He, "in every storm of life was oak and rock, but in the sunshine, he was vine and flower."

WALTER D. WISE.



Charles G. Hill, M. D.

DR. CHARLES G. HILL

During the past year the Faculty of Physic of the University of Maryland has suffered severely from the visitations of death. Pole, Fort, Harrison and Watson during this period have been summoned to appear before the throne of their Maker; and now, we are called upon to mourn the loss of Dr. Charles G. Hill who departed this life, December 30, 1925, aged 77 years. Dr. Hill was graduated from the Washington University Medical School with the class of 1870. For more than 50 years he was a picturesque as well as a conspicious figure in the civil and medical life of Baltimore. He was a past-president of the Medical and Chirurgical Faculty of Maryland. For many years he was professor of nervous and mental diseases in the Baltimore Medical College, and on the merger of that institution with the University of Maryland he was appointed professor of psychiatry in the latter school, and in 1920 emeritus professor of psychiatry. He was of a genial disposition and courtly bearing, a ready speaker and a natural born raconteur. As a medico-legal expert, his services were constantly in demand. In his death the University of Maryland and the profession has suffered a great loss, and his memory will be ever held in fond recollection by his colleagues and former pupils.

DEATHS

Dr. Harvey Ashbury Fawsett, Rome, New York; class of 1891; aged 57; died, January 28, 1926, following an operation.

Dr. James Sherman Schwartzwelder, Mercersburg, Pennsylvania; B. M. C., class of 1890 and Jefferson Medical College of Philadelphia, class of 1892; aged 60; died, February 4, 1926, of heart disease.

Dr. Augustus C. Crothers, Havre de Grace, Maryland; class of 1888; aged 64; died, January 20, 1926, following a long illness.

Dr. James F. Saltry, Scranton, Pennsylvania, P. & S., class of 1887; aged 59; died, January 7, 1926.

Dr. Edward Roland Hart, Suffolk, Virginia; class of 1901; aged 46; died, January 22, 1926.

Dr. Archibald Cunningham Harrison, Baltimore, Maryland; class of 1887; professor of surgery in the University of Maryland and formerly professor of surgery in the College of Physicians and Surgeons of Baltimore; past-president of the Medical and Chirurgical Faculty or Maryland; served in the M. C., United States Army, during the World War, with the rank of Colonel; aged 61; died, January 17, 1926, of heart disease.

Dr. Harry Lincoln Kolseth, Baltimore Maryland; B. M. C. class of 1912; aged 58; died December 5, 1925, of arterio-sclerosis and hypertension.

Dr. Frank K. Moyer, Schoolcraft, Michigan; B. M. C., class of 1897; aged 51; died, January 2, 1926, of heart disease.

Dr. Frank M. Eccles, Oxford, Maryland; P. & S. class of 1881; aged 67; died January 9 1926.

Dr. Charles Bagley, Sr., Eagley, Maryland; Washington University School of Medicine, class of 1872; aged 77; died, February 13, 1926, of apoplexy. He was the father of Dr. Charles Bagley, Jr., of Baltimore, class of 1904, and Dr. Cecil H. Bagley, also of Baltimore, a graduate of the Johns Hopkins University.

Dr. Henry Louis Perrie Naylor, Pikesville, Maryland; class of 1860; one of the oldest living alumni of the University of Maryland; aged 86; died, February 19, 1926, of heart disease. He was the father of Dr. Henry A. Naylor, also of Pikesville, Maryland, class of 1900.

Dr. Irving Hardy, Morgantown, West Virginia; P. & S., class of 1903; also Maryland Medical College, class of 1899; Queen's University Faculty of Medicine, Kingston, Ont., Canada, class of 1909; professor of principles and practice of surgery, and clinical professor of surgery, West Virginia University School of Medicine, Morgantown; surgeon in charge, Allegheny Heights Hospital, Davis, 1904-1914, and the City Hospital, 1914-1925; aged 52; died, February 3, 1926, of heart disease.

Dr. Philemon Jenkins Macon, Warrenton, North Carolina; class of 1883; formerly member of the State Legislature and Board of Education; aged 66; died, December 27, 1925.

Dr. Harry Algire, Baltimore, Maryland; class of 1895; aged 52; died, January 24, 1926, following a short illness.

Dr. John Peach, Mitchellville, Maryland; class of 1857; aged 90; died, December 6, 1925, following a long illness.

Dr. William Topping Watson, Baltimore, Maryland; class of 1891; formerly professor of therapeutics in the University of Maryland and president of the Baltimire City Medical Society, aged 63; died, February 6, 1926, of septicemia consecutive to an infection of the nose.

Dr. William Garth Clopton, Baltimore, Maryland, for many years an assistant in the medical department of the University Hospital Dispensary, a former pupil in the Medical Department and a graduate of the University of the South Medical Department Sewanee, class of 1904; died, March 16, 1926, of intestinal obstruction following a laparotomy.

Dr.Thomas Leonard Richardson, Baltimore, Maryland; B.M.C., class of 1898; for 15 years quarantine officer of the Baltimore station; aged 64; died, January 6, 1926, of heart disease.

Dr. Winfield M. Thome, Mount Joy, Pennsylvania; B. M. C., class of 1906; aged 44; died, December 26, 1925.

Dr. Clarence Kent Jump, Baltimore, Maryland; class of 1885; aged 63; died, December 28, 1925, of heart disease.

Dr. Cassius Dulany Laws, Bayard, Virginia; class of 1877; aged 68; died, December 21, 1925, of heart disease.

Dr. John Hamilton Moore, San Antonia, Texas; class of 1872; aged 77; died, December 28, 1925.

Dr. Charles Howard Lewis, Richmond, Virginia; class of 1900; formerly assistant professor of pharmacology and demonstrator of physiology, University College of Medicine, Richmond and associate professor of physiology and instructor in obstetrics, Medical College of Virginia, Richmond; served in the M. C., U. S. Army, during the World War; age 48; died, January 3, 1926.

Dr. Charles Geraldus Hill, Baltimore, Maryland; Washington University School of Medicine; class of 1870; formerly professor of nervous and mental diseases, in the Baltimore Medical College, and emeritus professor of psychiatry at the University of Maryland; a former president of the Medical and Chirurgical Faculty of Maryland; physician in chief, Mt. Hope Retreat, 1886-1925; aged 76; died, December 30, 1925, of heart disease.

Dr. William Morgan Smith, Richmond, Virginia; class of 1880; president of the Virginia State Board of Health; executive secretary of the Virginia Tuberculosis Association; served in the Spanish-American War; aged 66; died, December 22, 1925, or cerebral hemorrhage.

Dr. Thomas B. Johnson, Frederick, Maryland; class of 1889; president-elect of the Medical and Chirurgical Faculty of Maryland; aged 57; died, December 25, 1925, of pulmonary edema.

Dr. Joseph Daniel Hartnett, Winsted, Conn.; B. M. C., class of 1911; aged 39; died, December 26, 1926.

Dr. James R. Gore, Reisterstown, Maryland; class of 1867; aged 79; died, December 23, 1925, of senility.

Dr. Samtel Cecil Oglesby, Girdletree, Maryland; class of 1892; aged 55; died, November 15, 1925; of broncho-pneumonia.

Dr. Edwin DeWitt Cronk, Winfield, Maryland; class of 1884; aged 64; died, December 10, 1925, of heart disease.

Dr. John William Holmes, Pulaski, Virginia; class of 1882; aged 77; died, December 5, 1925.

Dr. Clifford T. W. Sappington, Oxford, Maryland; class of 1903; aged 45; died November 29, 1925.

THE NURSES' HOME BUILDING FUND

Every loyal alumnus will want to share in building the addition to the Nurses' Home. This work, as you know, is an Alumni undertaking, pure and simple, being sponsored by the Alumni Council.

The fund now totals $23,205.43. The addition will cost something like $38,000. When the new President, Dr. Pearson, arrives in September, it will hearten him to know that the alumni are willing to share in the development of the institution and to find that this constructive bit of work actually has been accomplished by them.

Can and **will** you share in this project by a contribution based on your ability to give and thus register your continued interest in the University's welfare?

A list of contributions received since the last issue of the Bulletin follows:

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BULLETIN

OF THE

University of Maryland School of Medicine

AND

College of Physicians and Surgeons

Successor to THE HOSPITAL BULLETIN of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons.

VOL. XI JULY, 1926 No. 1

ANNUAL ANNOUNCEMENT.

SESSION 1926-27.

CALENDAR

1926-1927

SCHOOL OF MEDICINE

1926.

September 21 to 25, Inc.—Examinations for advanced standing.

September 27—Instruction begins with the first scheduled period.

October 4—Last day for registration.

November 11—Holiday (Armistice Day).

November 24—Thanksgiving recess begins after the last scheduled period.

November 29—Instruction resumed with the first scheduled period.

December 23—Christmas recess begins after the last scheduled period.

1927.

January 3—Instruction resumed with the first scheduled period.

January 17—Registration begins for the second semester.

January 31—Instruction begins (second semester).

February 5—Last day for registration (second semester).

February 22—Holiday (Washington's Birthday).

April 14—Easter recess begins after the last scheduled period.

April 19—Instruction resumed with the first scheduled period.

June 4—Commencement Day.

THE UNIVERSITY OF MARYLAND

Control of the University of Maryland is vested in a Board of nine Regents, appointed by the Governor and confirmed by the Senate for terms of nine years each. The general administration of the University is vested in the President. The University Council is an advisory body, composed of the President, the Assistant to the President, the Director of the Agricultural Experiment Station, the Director of the Extension Service, and the Deans. The University Council acts upon all matters having relation to the University as a whole, or to co-operative work between the constituent groups. Each school has its own Faculty Council, composed of the Dean and members of its Faculty; each Faculty Council controls the internal affairs of the group it represents.

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The College of Arts and Sciences,
The School of Medicine,
The School of Law,
The School of Dentistry,
The School of Pharmacy,
The College of Education,
The College of Home Economics,
The Graduate School,
The Summer School,
The Department of Physical Education and Recreation.

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Joseph I. Kemler, M.D., Associate in Ophthalmology.
Henry T. Collenberg, A.B., M.D., Associate in Clinical Pathology.
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F. A. Ries, M.D., Associate in Physiology.
Howard E. Ashbury, M. D., Associate in Roentgenology.
A. M. Evans, M.D., Associate in Surgery.
Frank B. Anderson, M.D., Associate in Diseases of Throat and Nose.
Maurice Feldman, M.D., Associate in Gastro-Enterology.

W. H. Daniels, M.D., Associate in Orthopaedic Surgery.
F. L. Jennings, M.D., Associate in Surgery.
Harris Goldman, M.D., Associate in Genito-Urinary Surgery.
Edward S. Johnson, M.D., Associate in Surgery.
C. A. Reifschneider, M.D., Associate in Surgery.
Milford Levy, M.D., Associate in Neurology.
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Henry F. Buettner, M.D., Instructor in Bacteriology.
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Everard Briscoe, M.D., Assistant in Surgery and Anatomy.
N. J. Davidov, M.D., Assistant in Gastro-Enterology.
Albert Eisenberg, M.D., Assistant in Gastro-Enterology.
M. Koppelman, M.D., Assistant in Gastro-Enterology.
George E. Wells, M.D., Assistant in Pediatrics.
Wetherbee Fort, M.D., Assistant in Medicine.
F. S. Orem, M.D., Assistant in Pediatrics.
I. S. Zinberg, M.D., Assistant in Gastro-Enterology.
M. G. Gichner, M.D., Assistant in Medicine.
H. C. Knapp, M.D., Assistant in Genito-Urinary Diseases.
J. H. Collinson, M.D., Assistant in Genito-Urinary Diseases.
Milton C. Lang, M.D., Assistant in Genito-Urinary Diseases.
Leo Brady, M.D., Assistant in Gynecology.
Maurice Lazenby, A.B., M.D., Assistant in Obstetrics.
H. L. Rogers, M.D., Assistant in Orthopedic Surgery.
D. T. Pessagno, M.D., Assistant in Surgery.
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Robt. W. Johnson, M.D., Assistant in Anatomy.
Joseph N. Zierler, M.D., Assistant in Gastro-Enterology.
W. E. Cole, M.D., Assistant in Pediatrics.
H. A. Rutledge, M.D., Assistant in Pediatrics.
Albert Jaffe, M.D., Assistant in Pediatrics.
Frederick B. Dart, M.D., Assistant in Medicine.
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A. C. Monninger, M.D., Assistant in Dermatology.
Isador A. Siegel, M.D., Assistant in Obstetrics.
John A. O'Connor, M.D., Assistant in Surgery.
Lawrence S. Otell, M.D., Assistant in Pathology.
James Brown, M.D., Assistant in Surgery.
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Elizabeth B. Sherman, M.D., Assistant in Pediatrics.
Welch England, M.D., Assistant in Pathology.
L. J. Millan, M.D., Assistant in Genito-Urinary Diseases.
William Emrich, M.D., Assistant in Genito-Urinary Diseases.
W. H. Woody, M.D., Assistant in Medicine.
Thomas B. Turner, M.D., Assistant in Medicine.
H. W. Rosenthal, M.D., Assistant in Neurology.

University of Maryland School of Medicine

and

College of Physicians and Surgeons.

As a result of the merger accomplished in 1915 the combined schools offer the student the abundant resources of both institutions, and, in addition, by earlier combination with the Baltimore Medical College, the entire equipment of three large medical colleges.

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was chartered in 1807, under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties, of Divinity, of Law, and of Arts and Sciences, and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

Established thus for more than a century, the School of Medicine of the University of Maryland has always been a leading medical college, especially prominent in the South and widely known and highly honored throughout the country.

The beautiful college building at Lombard and Greene Streets, erected in 1814-1815, is the oldest structure in America devoted to medical teaching. Here was founded one of the first medical libraries and the first medical college library in the United States.

Here for the first time in America dissecting was made a compulsory part of the curriculum; here instruction in Dentistry was first given (1837), and here were first installed independent chairs for the teaching of Diseases of Women and Children (1867) and of Eye and Ear Diseases (1873).

The School of Medicine was one of the first to provide for adequate clinical instruction by the erection in 1823 of its own hospital, and in this hospital intramural residency for the senior student was first established.

In 1913, juncture was brought about with the Baltimore Medical College, an institution of 32 years' growth. By this association the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated under Legislative enactment in 1872, and established on Hanover Street in a building afterwards known as the Maternite, the first obstetrical hospital in Maryland. In 1878 union was affected with the Washington University School of Medicine, in existence since 1827, and the College was removed to its present location at Calvert and Saratoga Streets. By this arrangement medical control of the City Hospital, now the Mercy Hospital, was obtained, and on this foundation in 1899 the present admirable college building was erected.

ORGANIZATION OF THE SCHOOL OF MEDICINE

LABORATORY AND CLINICAL FACILITIES.

The Laboratories.

The laboratories are located at two centers, the group of buildings at Greene and Lombard Sts., and the Building at Calvert and Saratoga Sts. The schedule is so adjusted that the laboratory periods are placed with a view of obviating unnecessary movement on the part of the classes. The building known as Gray Laboratory, at Greene and Lombard Sts., houses three departments. The Anatomical Laboratory is placed upon the top floor, where skylights and an auxiliary modern system of electric lighting gives adequate illumination of the subjects. On this floor are the office of the department and the necessary preparation rooms. The Department of Pharmacology occupies the second floor. There is a large room

for the general student laboratory, which is thoroughly equipped with apparatus of recent acquisition, and in addition contains many instruments of unique and original design. With office and stock-room adjoining, this laboratory is complete for student experimentation. On the first floor of Gray Laboratory is the Department of Physiology. In addition to the large student laboratory, which is constructed for sections of forty-five students, there are rooms for the departmental office, preparation of material, and storage of apparatus. An additional room is devoted exclusively to mammalian experiments. In this building there is maintained an animal room where is kept an abundance of material for experimental purposes. The embalming and storage plant for the Department of Anatomy is in physical connection with the building and its special department. The laboratories of physiology and pharmacology are completely equipped with apparatus lockers so that in accord with the best ideas of instruction, the students work in groups of two each, and each group has sufficient apparatus so that the experimental work can be carried on without delay or recourse to a general stock-room.

The laboratories of Pathology and Biochemistry are located on the third floor of the Dental Building. The former department has a large student laboratory with a capacity of ninety; the tables are so placed as to secure the most satisfactory illumination for microscopic work, in addition, all of the tables are electrically equipped for substage illumination. This equipment is also provided for all laboratories where microscopic work obtains. The museum of the Department of Pathology adjoins the student laboratory. Here are available for demonstration about fifteen hundred carefully prepared and mounted specimens, and for laboratory instruction and study, the material from more than two hundred autopsies with complete clinical histories. Several preparation, research, and office rooms communicate with the other rooms of this department. The laboratory of Biochemistry is constructed and equipped for sections of fifty. The laboratory is completely equipped for the facilitation of work. The office and stock-room adjoin. In the Main Building is the Museum of Anat-

omy, where are arranged for student reference, specimens which represent the careful selection of material over a period of many years. In the University Hospital is the Student Laboratory for the analytical studies of those students who are serving as clinical clerks on the wards. A similar laboratory is maintained in the building at the N. W. corner of Saratoga and Calvert Sts., for the student work on the wards of the Mercy Hospital.

In this latter building are two laboratories for Bacteriology, Histology, and Clinical Pathology, and an additional dissecting room which is used for the course in Topographical Anatomy. The two laboratories accommodate ninety students or the full class, and are equipped with necessary lockers for microscopes and apparatus. Each of the departments housed in this building are provided with their individual offices, preparation, and stockrooms.

Clinical Facilities

UNIVERSITY HOSPITAL.

The University Hospital which is the property of the University of Maryland, is the oldest institution for the care of the sick in the State of Maryland. It was opened in September, 1823, under the name of the Baltimore Infirmary, and at that time consisted of but four wards, one of which was reserved for eye cases.

The present hospital has a capacity of 275 beds devoted to general medicine, surgery, obstetrics and the various medical and surgical specialties. It is equipped with a thoroughly modern X-ray department and clinical laboratory, and a postmortem building which is constructed with special reference to the instruction of students in *pathological anatomy.*

The hospital is situated opposite the medical school buildings so that the students lose no time in passing from the lecture halls and laboratories to the clinical amphitheater, dispensary and wards.

Owing to its situation, being adjacent to the largest manufacturing district of the city and the shipping district, large numbers of accident cases are received. These combined with

the cases of many sick seamen and with patients from our own city furnish a large amount of clinical material. Accommodations for thirty obstetrical patients are provided in the hospital for the purpose of furnishing actual obstetrical experience to each member of the graduating class.

In connection with the University Hospital an out-door obstetrical clinic is conducted, in which every case has careful pre-natal supervision, is attended during labor by a senior student, supervised by a hospital physician and assisted by a graduate nurse, and is visited during the puerperium by the attending student and graduate nurse. Careful prenatal, labor and puerperal records are kept, making this work of extreme value to the medical student, not only from the obstetrical standpoint, but in making him appreciate the value of social service and public health work.

During the year ending December 31, 1925, 395 cases were delivered in the hospital and 935 cases in the out-door department. Students in the graduating class delivered an average of fourteen cases, each student being required to deliver twelve cases.

The dispensaries associated with the University Hospital and the Mercy Hospital are organized upon a uniform plan in order that the teaching may be the same in each. Each dispensary has the following departments: Medicine, Surgery, Obstetrics, Children, Eye and Ear, Genito-Urinary, Gynecology, Gastro-Enterology, Neurology, Orthopaedics, Proctology, Dermatology, Throat and Nose, Tuberculosis and Psychiatry.

All students in their junior year work in the departments of Medicine and Surgery each day in one of the dispensaries.

All students in their senior year work in the special departments one hour each day.

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MAURICE C. PINCOFFS, M.D.
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WM. H. SMITH, M.D.

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NATHAN WINSLOW, M.D. FRANK S. LYNN, M.D.
CHARLES REID EDWARDS, M.D.

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EDWARD A. LOOPER, M.D.

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Genito-Urinary Surgeon.

W. H. TOULSON, A.B., M.Sc., M.D.

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HENRY J. WALTON, M.D. HOWARD E. ASHBURY, M.D.

Dermatologist.

HENRY M. ROBINSON, M.D.

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W. G. QUEEN, M.D.

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J. W. DOWNEY, M.D.

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J. Mason Hundley, M.D.
Hugh Brent, M.D.
W. S. Gardner, M.D.
R. G. Willse, M.D.

RESIDENT STAFF.

Resident Physician.

Edgar R. Miller, M.D.

Assistant Resident Physician.

Dr. Francis A. Ellis.

Assistant Resident on Pediatrics.

Elizabeth B. Sherman, A.B., M.D.

Resident Surgeon.

Dr. R. S. Anderson.

Assistant Resident Surgeon.

W. E. Lennon, M.D.

Resident Obstetrician.

Eva F. Dodge, M.D.

Assistant Resident Obstetrician.

Margaret B. Ballard, M.D.

Resident Gynecologist.

Knight Reynolds, M.D.

Internes.

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Charles W. Edmonds, M.D.
Julian C. Elliott, M.D.
Welch England, M.D.
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Roscoe Metzel, M.D.
M. P. Byerly, M.D.
William Michel, M.D.
A. L. Fehsenfeld, M.D.
Wm. H. Triplett, M.D.
Joseph Rosenblatt, M.D.

Diseases of Stomach and Intestine.

J. H. Ullrich, M.D., *Chief of Clinic.*

Joseph Sindler, M.D.
Z. Morgan, M.D.
M. S. Koppleman, M.D.
N. J. Davidov, M.D.
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B. Pushkin, M.D.

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Nicholas W. Pinto, M.D.
Morris L. Schenidlinger, M.D.
Harry W. Rosenthal, M.D.

Diseases of the Lungs.

C. C. Habliston, M.D., *Chief of Clinic.*

Diseases of Metabolism.

H. M. Stein, M.D., *Chief of Clinic.*

Cardiovascular Diseases.

William S. Love, Jr., M.D., *Chief of Clinic.*

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C. Loring Joslin, M.D., *Chief of Clinic.*
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W. J. Todd, M.D.
G. E. Wells, M.D.
F. S. Orem, M.D.
W. L. Brent, M.D.
Albert Jaffe, M.D.
J. H. Traband, M.D.
W. G. Geyer, M.D.
C. E. Macke, M.D.
G. A. Knipp, M.D.
J. J. McGarrell, M.D.
H. A. Rutledge, M.D.
R. M. Hening, M.D.
Marie Kovner, M.D.
A. G. Webster, M.D.
Ephraim Meyer, M.D.
Rachel Korotky, M.D.
Elizabeth B. Sherman, M.D.

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E. S. PERKINS, M.D.
F. A. SIEGRIST, M.D.
R. H. WIGGINS, M.D.
E. S. JOHNSON, M.D.
W. R. JOHNSON, M.D.
JAMES BROWN, M.D.
T. N. WILSON, M.D.
J. A. O'CONNOR, M.D.

Orthopaedic Surgery.

R. TUNSTALL TAYLOR, A.B., M.D., *Professor of Orthopaedic Surgery.*

COMPTON RIELY, M.D., *Chief of Clinic.*

W. H. DANIELS, M.D.
H. L. WHEELER, M.D.

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J. H. COLLINSON, M.D.
H. T. COLLENBERG, M.D.
MILTON C. LANG, M.D.
H. C. KNAPP, M.D.
L. K. FARGO, M.D.

X-Ray.

HENRY J. WALTON, M.D., *Roentgenologist.*

Dermatology.

H. M. ROBINSON, M.D., *Chief of Clinic.*
J. E. GATELY, M.D.

Nose and Throat.

E. A. LOOPER, M.D., *Clinical Professor of Diseases of Throat and Nose.*

FRANK B. ANDERSON, *Chief of Clinic.*

F. A. HOLDEN, M.D.
CHARLES CAHN, M.D.

Gynecology.

J. M. HUNDLEY, JR., M.D.
LEO BRADY, M.D.
A. V. BUCHNESS, M.D.
GEORGE L. WISSIG, M.D.
WILLIAM J. FULTON, M.D.

Obstetrics.

L. H. DOUGLASS, M.D., *Chief of Clinic.*

DUDLEY PLEASANTS BOWE, B.A., M.D.
J. G. M. REESE, M.D.
M. ALEXANDER NOVEY, M.D.
ISADORE A. SIEGEL, M.D.
MAXWELL MAZER, M.D.

Eye and Ear.

HARRY FRIEDENWALD, M.D., *Professor of Ophthalmology and Otology.*
J. W. DOWNEY, M.D.
H. L. SINSKY, M.D., *Chief of Clinic.*
CHARLES CAHN, M.D. JOHN G. RUNKEL, M.D.

Social Service.
MISS GRACE PEARSON, *Directress.*

UNIVERSITY HOSPITAL DISPENSARY REPORT.

October 1, 1924, to September 30, 1925.

	Cases		
	New	Old	Total
Pediatrics	2,484	19,978	22,462
Surgery	2,059	7,360	9,419
Dermatology	3,414	4,415	7,829
Obstetrics	1,491	4,608	6,099
Eye and Ear	1,592	3,062	4,654
Medicine	987	3,153	4,140
Genito-Urinary	536	2,901	3,437
Orthopedic	315	2,893	3,208
Gynecology	1,023	1,895	2,918
Nose and Throat	891	871	1,762
Neurology	351	1,272	1,623
Gastro-Intestinal	293	731	1,024
Tuberculosis	200	212	412
Cystoscopy	66	300	366
Psychiatry	106	167	273
Proctology	52	59	111
Total	15,860	53,877	69,737

In addition to the above there were treated in the State Venereal Clinic 20,133 patients.

MERCY HOSPITAL

The Sisters of Mercy first assumed charge of the Hospital at the corner of Calvert and Saratoga Streets then owned by the Washington University, in 1874. By the merger of 1878 the Hospital came under the control of the College of Physicians and Surgeons, but the Sisters continued their work of administering to the patients.

In a very few years it became apparent that the City Hospital, as it was then called, was much too small to accommodate the rapidly growing demands upon it. However, it was not until 1888 that the Sisters of Mercy, with the assistance of the Faculty of the College of Physicians and Surgeons, were able to lay the cornerstone of the present Hospital. This building was completed and occupied late in 1889. Since then the growing demands for more space has compelled the erection of additions, until now there are accommodations for 351 patients.

In 1909 the name was changed from The Baltimore City Hospital to Mercy Hospital.

Mercy Hospital is located in the center of a city of 800,000 inhabitants.

The clinical material in the free wards is under the exclusive control of the Faculty of the University of Maryland School of Medicine and College of Physicians and Surgeons. It adjoins the College building, and all surgical patients from the public wards are operated upon in the College operating rooms. This union of the Hospital and College buildings greatly facilitates the clinical teaching, as there is no time lost in passing from one to the other.

Mercy Hospital is the hospital of the United Railways and Electric Company of Baltimore City, and receives patients from the Baltimore and Ohio Railroad Company and from the Pennsylvania Railroad Company and its branches.

BOARD OF GOVERNORS.

SAMUEL S. SHOEMAKER, ESQ., *Chairman*

SISTER M. CARMELITA	ALEXIUS MCGLANNAN, A.M., M.D., LL.D.
SISTER M. IMELDA	JULIUS FRIEDENWALD, A.M., M.D.
SISTER M. HILDA	W. D. WISE, M.D.
SISTER M. BEATRICE	H. G. BECK, M.D.
SISTER M. FLORENCE	F. D. SANGER, M.D.
SISTER M. LOUISE	T. K. GALVIN, M.D.

MERCY HOSPITAL STAFF.

SURGICAL DIVISION.

ALEXIUS MCGLANNAN, A.M., M.D., LL.D.

C. F. BLAKE, M.D. W. D. WISE, M.D.

Associate Surgeons.

ELLIOT H. HUTCHINS, M.D.	A. M. EVANS, M.D.
R. H. LOCHER, M.D.	F. L. JENNINGS, M.D.
THOMAS R. CHAMBERS, M.D.	F. X. KEARNEY, M.D.

Assistant Surgeons.

I. O. RIDGLEY, M.D.	CHAS. MAXSON, M.D.
N. C. MARVEL, M.D.	H. B. MCELWAIN, M.D.
EVERARD BRISCOE, M.D.	D. J. PESSAGNO, M.D.

DWIGHT MOHR, M.D.

Ophthalmologist and Otologist.

HARRY FRIEDENWALD, M.D.

Associates.

H. K. FLECK, M.D. J. W. DOWNEY, M.D.

Rhinologists and Laryngologists.

FRANK D. SANGER, M.D. GEORGE W. MITCHELL, M.D.

Associate Rhinologists and Laryngologists.

W. F. ZINN, M. D. RAYMOND MCKENZIE, M.D.

Proctologist.

CHARLES F. BLAKE, M.D.

Associate.

L. J. ROSENTHAL, M.D.

Orthopaedic Surgeon.

ALBERTUS COTTON, M.D.

Associate.

H. L. ROGERS, M.D.

Urologists.

A. G. RYTINA, M.D. A. J. GILLIS, M.D.

MEDICAL DIVISION.

Physicians.

MAURICE C. PINCOFFS, M.D.

WILLIAM F. LOCKWOOD, M.D. CARY B. GAMBLE, M.D.
STANDISH MCCLEARY, M.D. HARVEY G. BECK, M.D.

Associates.

HUBERT C. KNAPP, M.D. E. E. MAYER, M.D.
C. C. W. JUDD, M.D. BARTUS T. BAGGOTT, M.D.
LEON FREEDOM, M.D. GEORGE MCLEAN, M.D.
F. T. KYPER, M.D. A. A. SUSSMAN, M.D.
H. R. PETERS, M.D.

Gastro-Enterologist.

JULIUS FRIEDENWALD, M.D.

Associates.

T. FREDERICK LEITZ, M.D. THEODORE MORRISON, M.D.

Assistants.

MAURICE FELDMAN, M.D. JOSEPH SINDLER, M.D.

Pediatricians.

JOHN RUHRAH, M.D. EDGAR B. FRIEDENWALD, M.D.

Assistant.

F. B. SMITH, M.D.

Neurologist and Psychiatrist.

ANDREW C. GILLIS, M.D.

Assistant.

MILFORD LEVY, M.D.

Dermatologist.

MELVIN ROSENTHAL, M.D.

OBSTETRICAL DIVISION.

Obstetricians.

CHARLES BRACK, M.D. GEO. W. DOBBIN, M.D.

Associate Obstetricians.

E. P. SMITH, M.D. T. K. GALVIN, M.D.
J. J. ERWIN, M.D.

GYNECOLOGICAL DIVISION.

Gynecologists.

WILLIAM S. GARDNER, M.D. ABRAHAM SAMUELS, M.D.
GEORGE A. STRAUSS, M.D.

Associate Gynecologists.

T. K. GALVIN, M.D. E. P. SMITH, M.D.

PATHOLOGICAL DIVISION.

Pathologists.

STANDISH MCCLEARY, M. D. HUGH R. SPENCER, M.D.

Clinical Pathologists.

H. T. COLLENBERG, M.D.
JOHN G. HUCK, M.D. EMIL G. SCHMIDT, Ph.D.
Technicians—SISTER M. JOAN, Ph.G., R.N., ANNA CHENOWETH, R.N.
FRANCES DONOVAN, R.N.

X-RAY DEPARTMENT.

Radiographers.

ALBERTUS COTTON, M.D. HARRY L. ROGERS, M.D.
K. W. GOLLEY, M.D.
Technician—SISTER M. DE SALES, R.N.

MERCY HOSPITAL RESIDENT STAFF.

Resident Physician.

THOMAS B. TURNER, M.D.

Assistant Resident Physician.

J. E. EASTLAND, M.D.

Resident Surgeon.

P. G. MATTA, M.D.

Assistant Resident Surgeons.

EDWARD PLASSNIG, M.D.
J. W. NELSON, M.D.
I. MASERITZ, M.D.
HARRY GLICKMAN, M.D.
S. S. ARMSTRONG, M.D.

Resident Gynecologist.

CECIL M. HALL, M.D.

Internes.

F. R. DI PAULA, M. D.
SAMUEL HAUTMAN, M.D.
E. V. JORDAN, M.D.
E. J. LEONARD, M.D.
W. C. MERKEL, M.D.
I. L. LEVIN, M.D.
A. RATTENNI.
B. A. WEBER, M.D.

DISPENSARY STAFF OF MERCY HOSPITAL.

Surgery Supervisors.

ALEXIUS MCGLANNAN, M.D. W. D. WISE, M.D.

Attending Surgeons.

D. H. MOHR, M.D. EVERARD BRISCOE, M.D.
I. O. RIDGELY, M. D. H. B. MCELWAIN, M.D.
D. J. PESSAGNO, M.D.

Genito-Urinary Surgery.

A. J. GILLIS, M.D. K. B. LEGGE, M.D.

Orthopedic Surgery.

ALBERTUS COTTON, M.D. HARRY L. ROGERS, M.D.
K. W. GOLLEY, M.D.

Medicine Supervisors.

W. F. LOCKWOOD, M.D. M. C. PINCOFFS, M.D.

Attending Physicians.

B. T. BAGGOTT, M.D. F. T. KYPER, M.D.
F. N. HILLIS, M.D. ALBERT SCAGNETTI, M.D.
A. A. SUSSMAN, M.D.

Cardiovascular Diseases.

A. A. SUSSMAN, M. D., *Chief of Clinic.*

Diseases of the Lungs.

B. T. BAGGOTT, M.D., *Chief of Clinic.*

Diseases of Stomach.

Supervisor, JULIUS FRIEDENWALD, M.D.

Attending Physicians.

T. FREDERICK LEITZ, M.D.
M. FELDMAN, M.D .
THEODORE H. MORRISON, M.D.
JOSEPH SINDLER, M.D.
S. ZINBERG, M.D.
A. EISENBERG, M.D.
J. N. ZIERLER, M.D.
I. I. LEVY, M.D.
C. D. STEENKEN, M.D.

W. F. ZINN, M.D., *Esophagoscopist.*

Nervous Diseases.

Supervisor, A. C. GILLIS.

Attending Physicians.

MILFORD LEVY, M.D.
R. A. WARNER, M.D.

Diseases of Women.

Supervisors.

W. S. GARDNER, M.D.
A. SAMUELS, M.D.

Attending Surgeons.

E. P. SMITH, M.D.
J. J. ERWIN, M.D.
T. K. GALVIN, M.D.
C. F. J. COUGHLIN, M.D.
E. EDLAVITCH, M.D.

Diseases of Nose and Throat.

W. F. ZINN, M.D.
R. F. MCKENZIE, M.D.
F. A. PACIENZA, M.D.

Diseases of Eye and Ear.

H. F. FLECK, M.D.
J. I. KEMLER, M.D.
M. RASKIN, M.D.
F. A. PACIENZA, M.D.

Proctology.

L. J. ROSENTHAL, M.D.

Dermatology.

MELVIN ROSENTHAL, M.D.

Assistant.

WILLIAM G. COPPAGE, M.D.

Social Service Department.

SISTER M. HELEN, R.N.
CATHERINE CAMPBELL, R.N.

MERCY HOSPITAL DISPENSARY REPORT.

January 1, 1925, to December 31, 1925.

Sister M. Helen, Directress

Dispensary Clinics	Cases New	Old	Total
Surgical	1,024	3,091	4,115
Medical	1,189	1,811	3,000
Gynecological	304	821	1,125
Eye and Ear	423	807	1,230
Nose and Throat	675	596	1,271
Neurological	56	174	230
Gastro-Intestinal	127	443	570
Dental	16	17	33
Proctological.	16	28	44
Orthopedic	191	1,088	1,279
Dermatological	168	462	630
Genito-Urinary	772	5,114	5,886
	4,983	14,478	19,461

OTHER CLINICAL FACILITIES.

THE BALTIMORE CITY HOSPITAL.

The clinical advantages of the University have been largely increased by the liberal decision of the Board of Supervisors of City Charities to allow the immense material of these hospitals to be used for the purpose of medical education. There are daily visits and clinics in medicine and surgery by the Staff of the Hospitals. The autopsy material is unsurpassed in this country in amount, thoroughness in study, and the use made of it in medical teaching.

The Baltimore City Hospital consists of the following separate hospitals:

The General Hospital, 160 beds.

The Hospital for Chronic Cases, 88 beds.

The Hospital for Tuberculosis, 190 beds.

The Detention Hospital for Insane, 450 beds.

STAFF OF THE BALTIMORE CITY HOSPITAL.

VISITING STAFF.

THOMAS R. BOGGS, S.B., M.D., *Physician-in-Chief.*
ARTHUR M. SHIPLEY, Sc.D., M.D., *Surgeon-in-Chief.*
C. C. HABLISTON, M.D., *Physician-in-Chief to the Tuberculosis Hospital.*
HARRY GOLDSMITH, M.D., *Physician-in-Charge of the Detention Hospital for the Insane.*
WILEY D. FORBUS, A.B., M.D., *Visiting Pathologist.*
LAWRENCE S. OTELL, M.D., *Resident Pathologist.*

CONSULTING STAFF.

Otologist.

WILLIAM TARUN, M.D.

Gynecologists.

R. G. WILLSE, M.D.
J. MASON HUNDLEY, JR., M.A., M.D.

Urologist.

W. H. TOULSON, M.D.

Laryngologists.

H. R. SLACK, M.D.
EDWARD A. LOOPER, M.D.

Pediatrician.

JOHN RUHRAH, M.D.

Neurologist.

HENRY M. THOMAS, M.D.

Psychiatrists.

HENRY J. BERKLEY, M.D.
ADOLPH MEYER, M.D.

Orthopedist.

H. L. WHEELER, M.D.

Proctologist.

G. MILTON LINTHICUM, A.B., M.D.

Assistant Visiting Physician.

CHARLES R. AUSTRIAN, M.D.

Assistant Visiting Surgeons.

FRANK S. LYNN, M.D.
C. A. REIFSCHNEIDER, M.D.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN.

This institution contains seventy-five beds for the active treatment of deformities. It is situated at "Radnor Park," a colonial estate of seventy-five acres at Hillsdale, within the western city limits, reached by trolley.

This institution has city, state, endowed and private beds and every modern facility for the treatment of orthopaedic cases as well as a most beautiful park-like environment and farm, and is closely affiliated with the University of Maryland for bed-side instruction.

STAFF.

R. Tunstall Taylor, A.B., M.D., *Surgeon-in-Chief.*

Associate Surgeons.

Sydney M. Cone, A.B., M.D. Albertus Cotton, A.M., M.D.
Compton Riely, M.D.

Dispensary Surgeons.

H. L. Rogers, M.D. Moses Gellman, M.D.

Physio-Therapists and Instructors in Corrective Gymnastics.

Miss Anita Renshaw Presstman Miss Elizabeth Emory
Miss Florence Grape Miss Georgiana Wisong
Miss Mary H. Lee, *Principal of School.*
Miss Mary Sampson, *Assistant.*

Roentgenologists.

Henry J. Walton, M.D. Mrs. Georgiana Wisong

Attending Plastic Surgeon.

John Staige Davis, B.Sc., M.D.

Pediatrist.

Benjamin Tappan, B.A., M.D.

Attending Surgeon.

A. M. Shipley, Sc.D., M.D.

Attending Neuro-Surgeon.

CHARLES BAGLEY, JR., M.D.

Attending Laryngologist.

F. B. ANDERSON, M.D.

Attending Dermatologist.

JOHN R. ABERCROMBIE, A.B., M.D.

Attending Pathologist.

HOWARD J. MALDEIS, M.D.

Attending Oculist and Aurist.

WILLIAM TARUN, M.D.

Attending Neurologist.

IRVING J. SPEAR, M.D.

Attending Dentists.

G. E. P. TRUITT, D.D.S. J. B. BELL, D.D.S.

Consulting Surgeons.

J. M. T. FINNEY, A.B., M.D. RANDOLPH WINSLOW, A.M., M.D., LL.D.

Consulting Physicians.

THOMAS R. BROWN, A.B., M.D. LLEWELLYS F. BARKER, A.B., M.D.
THOMAS F. FUTCHER, A.B., M.D. WILLIAM S. THAYER, A.B., M.D.

Consulting Oculist.

HIRAM WOODS, M.D., LL.D.

Dispensary and Social Service Nurse.

MISS MABEL BROWN, R.N.

Head Nurse.

MISS GRACE L. ELGIN, R.N.

Resident Interne.

GORDON BENNETT TAYLOE

ST. VINCENT'S INFANT ASYLUM.

The facilities of this institution, containing 250 infants and children, have been kindly extended to the University of Maryland by the Sisters of Charity. This large clinic enables this school to present to its students liberal opportunities for the study of diseases of infants and children.

STAFF.

Obstetrician.
DR. L. H. DOUGLASS

Pediatricians.
DR. W. C. BACON
DR. C. R. GOLDSBOROUGH
DR. W. H. INGRAM
DR. C. L. JOSLIN

Surgeon.
DR. N. WINSLOW

Dermatologist.
DR. J. A. BUCHNESS

Oculist.
DR. C .A. CLAPP

Orthopedic Surgeon.
DR. W. H. DANIELS

Physician.
DR. C. P. CLAUTICE

INSTITUTIONS FOR THE TREATMENT OF THE INSANE AND FEEBLE-MINDED.

THE SHEPPARD AND ENOCH PRATT HOSPITAL. This institution is one of the most modern hospitals for the treatment and care of the insane in this country. It is well endowed and its superintendent is R. M. Chapman, M.D., Professor of Psychiatry at the University of Maryland. In this hospital intensive treatment and study of mental diseases is carried on a large number of the patients entering voluntary. The students under the direction of Dr. Chapman and his assistants in a series of clinics are shown the early manifestations and the various stages of mental diseases, the methods of treatment, and their effect. Special attention is given to etiological factors and the discussion of prevention.

SPRING GROVE HOSPITAL. Through the courtesy of the Superintendent of this institution, the Professor of Psychiatry is enabled to present to the weekly clinics to the fourth year class the different types of psychoses and psycho-neuroses.

LIBRARIES.

The University Library, founded in 1813 by the purchase of the collection of Dr. John Crawford, now contains 23,928 volumes, a file of 70 current (medical) journals, and several thousand pamphlets and reprints. It is well stocked with recent literature, including books and periodicals of general interest. The home of the Library is Davidge Hall, a comfortable and commodious building in close proximity to the class rooms and the Laboratories of the Medical Department. The Library is open daily during the year, except in August, for use of members of the Faculty, the students, and the profession generally.

The Library of the Medical and Chirurgical Faculty of Maryland, containing 50,000 volumes, is open to the students of the school. The leading medical publications of the world are received by the library and complete sets of many journals are available. Other Libraries of Baltimore are the Peabody (215,307 volumes) and the Enoch Pratt Free Library (483,-327 volumes).

All these libraries are open to the students of the school without charge.

ORGANIZATION OF THE CURRICULUM.

The following curriculum is the result of a thorough revision of teaching in this school in order to meet modern requirements. The multiplication of specialties in medicine and surgery necessitates a very crowded course and the introduction of electives will very soon be depended on to solve some of the difficulties.

The curriculum is organized under eleven departments:

1. Anatomy (including Histology and Embryology).
2. Physiology.
3. Bacteriology and Immunology.
4. Biological Chemistry.
5. Pharmacology and Materia Medica.
6. Pathology.
7. Medicine (including Medical Specialties).
8. Surgery (including Surgical Specialties).
9. Obstetrics.
10. Gynecology.
11. Ophthalmology and Otology.

The instruction is given in four years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures and functions of the normal body. Laboratory work occupies most of the student's time during these two years.

Some introductory instruction in Medicine and Surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of instructors insures attention to the needs of each student.

In most courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

DEPARTMENT OF ANATOMY, INCLUDING HISTOLOGY AND EMBRYOLOGY.

C. L. DAVIS, M.D. ..... Professor of Anatomy
TILGHMAN B. MARDEN, A.B., M.D. ..... Prof. of Histology and Embryology
EDWARD UHLENHUTH ..... Associate Professor of Anatomy
JOHN F. LUTZ, M.D. ..... Instructor in Histology
EVERARD W. BRISCOE, M.D. ..... Assistant in Anatomy
WM. R. JOHNSON, M.D. ..... Assistant in Anatomy
ROBT. W. JOHNSON, M.D. ..... Assistant in Anatomy
JOSEPH POKORNY, M.D. ..... Assistant in Anatomy

FIRST YEAR. *Didactic.* Five hours each week for thirty-two weeks. Each day, preceding the laboratory period, a quiz and demonstration of from forty to fifty minutes is held, covering the laboratory work for the day.

Laboratory. Eighteen hours each week for thirty-two weeks. This course includes a complete dissection of the human body, including the central nervous system. Abundance of good material is furnished and the student is aided in his work by competent demonstrators. Practical examinations are held at frequent intervals throughout the session and each student will be held to strict account for material furnished him. Each student is furnished a skeleton and a deposit is required to insure its return in good condition at the end of the session.

Histology.

FIRST YEAR. Lectures, recitations and laboratory work, ten hours each week during first semester; three hours each week during second semester. The most important part of the work will be done in the laboratory, where each student will be provided with apparatus, staining fluids and material necessary for the preparation of specimens for microscopical examination. An important aid to the course is the projection microscope and balopticon which are used for the pro-

jection upon a screen, of magnified images of the specimens actually used in the laboratory, and of illustrations from standard text books.

Embryology.

Lectures, recitations, and laboratory work; one hour each week during the first semester, and seven hours each week during the second semester.

This course includes the study of the development of the chick and the fundamental principles of mammalian embryology. In the laboratory, the hen's egg will be studied in its various stages of development, and sections of the chick at different periods of incubation will be made and studied microscopically. The latter part of the course will be devoted to the study of sections through different regions of mammalian embryos.

Special emphasis is laid upon the development in the human.

DEPARTMENT OF PHYSIOLOGY.

A. H. RYAN, M.D. ..... Professor of Physiology
CHARLES C. CONSER, M.D. ..... Associate Professor of Physiology
FERDINAND A. RIES, M.D. ..... Associate in Physiology
GEORGE A. KNIPP, M.D. ..... Instructor in Physiology

1. PHYSIOLOGY. The required course consists of lectures, recitations, laboratory work, demonstrations and conferences in the first and second years.

First Year. Two periods weekly of one hour each are given during the second half of the first year. These lectures are devoted to a general survey of the subject; the application of physical and physico-chemical methods to experimental physiology; the application of statistical methods and the presentation of results. The physiology of vision is also covered in lectures, the laboratory work being given in the second year.

Second Year. Three one-hour periods weekly throughout the year are devoted to lectures, recitations and demonstrations. Three hours weekly during the first semester and six hours per week during the second semester are spent in the

laboratory. In the laboratory students work in small groups with complete sets of apparatus. The work is arranged to illustrate fundamental principles and at the same time to familiarize the student with methods employed in experimental physiology and medicine. The laboratory results are discussed at informal conferences. The subjects covered in the didactic and laboratory work include muscle, nerve, electro-physiology, blood, lymph, circulation, respiration, digestion, absorption, secretion, nutrition, internal secretions, nervous system and special senses. A considerable part of the laboratory work is upon mammals. Consultation of original papers at the library is required and current articles are discussed.

2. CLINICAL PHYSIOLOGY. During the second semester of the second year a one-hour clinic is held each week by the Department of Medicine to correlate physiology and medicine and serve as an introduction to the work of the clinical years.

3. RESEARCH. Hours to be arranged. The facilities of the laboratory are available to qualified persons to undertake original investigations.

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY.

FRANK W. HACHTEL, M.D. ..... Professor of Bacteriology
WILLIAM ROYAL STOKES, M.D., Sc.D. ..... Professor of Bacteriology
LOUIS F. KRUMREIN, M.D. ..... Instructor in Bacteriology
J. A. F. PFEIFFER, M.D. ..... Instructor in Bacteriology
HENRY F. BUETTNER, M.D. ..... Instructor in Bacteriology

Instruction in bacteriology is given in the laboratory to the students of the second year during the first semester. This includes the various methods of preparation and sterilization of culture media, the study of pathogenic bacteria and the bacteriological examination of water and milk. The bacteriological diagnosis of the communicable diseases is also included in this course. Animal inoculations are made in connection with the bacteria studied. The most important protozoa are also studied in the laboratory. The principles of general bacteriology are taught by quiz, conference and lecture.

The principles of immunology are presented by means of quizzes, conferences and lectures to the second year class

throughout the second semester, and practical experiments are carried out by the class in laboratory sessions of three hours each, held twice weekly during the semester. During the session of 1926-27, however, immunology will be taught in the first semester of the second year.

DEPARTMENT OF BIOLOGICAL CHEMISTRY.

H. Boyd Wylie, M.D.....Professor of Biological Chemistry
Frank N. Ogden, M.D.....Associate in Biological Chemistry
Emil G. Schmidt, Ph.D.....Instructor in Biological Chemistry

Instruction in Biological Chemistry comprises laboratory work, lectures and student conferences.

Laboratory Work. The laboratory work consists in the study of indicators and volumetric and buffer solutions, followed by a series of experiments illustrating the physical and chemical properties of carbohydrates, proteins and lipins. Subsequently enzymes, the tissues of the body, and, finally, bile, milk and the more thorough investigations of the chemistry of urine and blood conclude the assigned experimental work.

Lectures. The lectures precede or run parallel to the assigned laboratory work. The first lectures treat of laboratory technic, the chemistry of indicators and solutions, osmosis, diffusion, dialysis, colloids, the law of mass action, catalysis, reversible reactions and finally enzymes. The following lectures refer to the chemistry and metabolism of water, salts, other inorganic substances, carbohydrates, proteins and lipins and end with a discussion of the effect of diets deficient in the accessory food factors. The final lectures relate to the secretions and excretions.

The student conferences are conducted by one of the instructors. These gatherings take the form of written quizzes or informal oral quizzes.

PHARMACOLOGY AND MATERIA MEDICA.

WILLIAM HENRY SCHULTZ, Ph.B., Ph.D.....Professor of Pharmacology
O. G. HARNE, A.B.....Associate Professor of Pharmacology
WILLIAM GLENN HARNE.....Assistant in Pharmacology
.....Assistant in Pharmacology

1. *Materia Medica and Pharmacology.* 56 hours required. The methods now used in presenting the subject matter of Materia Medica and Prescription Writing have evolved as a result of some years of practical teaching. The science of Pharmacology has introduced methods of critical analysis in the choice of drugs proposed for use as medicine. As aids in determining the particular drugs chosen for study, use is made of the "United States Pharmacopoeia" and "New and Non-Official Remedies."

Official titles, whenever practicable, are expressed in English and all quantities are stated in terms of the metric system. The only way to get away from the unscientific system of English weights and measures, and from a Latin system which few ever learn correctly is to refuse to teach either one of them.

When possible, drugs are grouped according to their chemical composition and the influence of various radicals and side chains emphasized, whereas drugs, the chemistry of which is not definitely established, are grouped according to their dominant physiological action. Following the Pharmacology of a given group, their place in practical medicine is indicated, and the student is requested to prescribe same in suitable form. Thus a Materia Medica is developed throughout the course, based upon Pharmacological action of drugs.

2. *Systematic Pharmacology.* 96 hours required. Second year. In this portion of the course, the student is taught Pharmacology as a pure science. The aim is to attain a mean between that which has a purely scientific bearing and that dominantly practical so that both a critical attitude toward drugs, and an understanding of the principles of dosage may be acquired. This is accomplished by lectures, quiz, conference and the following course of laboratory exercises.

3. *Pharmacodynamics.* 96 hours. Second year. This laboratory course runs parallel with Pharmacology 2. Many of

the most important problems of Immunology, Parasitic intoxications, and of Chemotherapy are essentially Pharmacological. In the first part of the course the experiments are upon normal animals, hence primarily toxocological in character. In the latter part of the course more and more emphasis is laid upon what is now designated as chemo-therapeutic index of drugs.

4. *Pharmacology of General and Local Anesthetics and Soporifics.* Four weeks, 3 lectures, 3 laboratory periods a week. This is a special course designed to meet the needs of physician and graduate nurse who wish to acquire a knowledge of the more recent developments in the pharmacology of depressant and sleep producing drugs. The course is so arranged that those properly qualified may continue the work under expert anesthetists in the wards of the hospitals connected with the university. Professor Schultz.

5. *Research in Pharmacology and Chemo-Therapy.* Properly qualified students are admitted to the laboratory with a view to their carrying on original investigations in drug action. Thoroughly equipped laboratories are well adapted for post-graduate study and research in Pharmacology. Hours will be arranged to suit the applicant. Professor Schultz.

DEPARTMENT OF PATHOLOGY.

Hugh R. Spencer, M.D.	Professor of Pathology
Standish McCleary, M.D.	Professor of Pathology
Sydney M. Cone, M.D.	Associate Professor of Pathology
Albert E. Goldstein, M.D.	Associate in Pathology
M. Alexander Novey, M.D.	Instructor in Pathology
H. R. Peters, M.D.	Instructor in Pathology
Monte Edwards, M.D.	Assistant in Pathology
Lawrence S. Otell, M.D.	Assistant in Pathology
Welch England, M.D.	Assistant in Pathology

Courses of instruction in Pathology are given during the second and third years. These courses are based on previous study of normal structure and function and aim to outline the natural history of disease. Instruction is made as practical as possible that the student may become familiar with the appearance of tissues in disease and may be able to correlate anatomical lesions with clinical symptoms and signs.

1. *General Pathology and Histo-Pathology.* This course is given to second year students. It includes the study and demonstration of disturbances of the body fluids, disturbances of structure, nutrition and metabolism of cells, disturbances of fat, carbohydrate and protein metabolism, disturbances in pigment metabolism, inflammation and tumors. The laboratory course consists in a daily preliminary talk on the subject for study, following which the student takes up the study of microscopical sections. Gross material from autopsy and from the museum is demonstrated in conjunction with the microscopical sections.

2. *Applied Pathology, Including Gross Morbid Anatomy and Morbid Physiology.* Third year students: In this course the special relationship of the gross and microscopical lesions to clinical symptoms and signs is emphasized. Fresh material from autopsy collected at the various hospitals is demonstrated and supplemented by a study of the respective autopsy protocols.

3. *Autopsies.* Third Year. Autopsy technic is taught to small groups of students by special instruction at autopsies performed at the various hospitals. Students are required to assist at the autopsy, study the organs, examine the microscopical sections, make cultures and prepare autopsy protocols.

4. *Clinical Pathological Conference.... Fourth Year.* In collaboration with the Department of Medicine. Material from autopsies is studied with reference to the correlation of the clinical aspects with the pathological findings.

5. *Advanced Work in Pathology.* Properly qualified students will be permitted to carry out advanced or research work along the lines of experimental pathology.

DEPARTMENT OF MEDICINE.

MAURICE C. PINCOFFS, B.S., M.D.....Professor of Medicine
GORDON WILSON, M.D.....Professor of Medicine
STANDISH MCCLEARY, M.D.....Professor of Pathology and Clinical Medicine
JOS. E. GICHNER, M.D.....Professor of Clinical Medicine
CHARLES W. MCELFRESH, M.D.....Professor of Clinical Medicine
G. CARROLL LOCKARD, M.D.....Professor of Clinical Medicine
HARVEY G. BECK, Sc.D., M.D.....Professor of Clinical Medicine
PAUL W. CLOUGH, B.S., M.D.....Associate Professor of Medicine
C. C. W. JUDD, A.B., M.D.....Associate Professor of Medicine
SYDNEY R. MILLER, M.D.....Associate Professor of Medicine
WALTER A. BAETJER, A.B., M.D.....Associate Professor of Medicine
HARRY M. STEIN, M.D.....Associate Professor of Medicine
H. D. MCCARTY, M.D.....Associate Professor of Clinical Medicine
WM. H. SMITH, M.D.....Associate Professor of Clinical Medicine
H. J. MALDEIS, M.D.....Associate Professor of Medical Jurisprudence
S. LLOYD JOHNSON, A.B., M.D.....Associate Professor of Medicine
JOHN G. HUCK, M.D.....Assistant Professor of Medicine
GEORGE MCLEAN, M.D.....Assistant Professor of Medicine
C. C. HABLISTON, M.D.....Assistant Professor of Medicine
L. A. M. KRAUSE, M.D.....Associate in Medicine
REED ROCKWOOD, A.B., M.S., M.D.....Associate in Medicine
BARTUS T. BAGGOTT, M.D.....Instructor in Medicine
R. C. METZEL, M.D.....Associate in Clinical Medicine
W. I. MESSICK, M.D.....Associate in Clinical Medicine
LEON FREEDOM, M.D.....Instructor in Medicine
H. R. PETERS, M.D.....Instructor in Medicine
WILLIAM MICHEL, M.D.....Instructor in Medicine
H. M. BUBERT, M.D.....Instructor in Medicine
EDWARD NOVAK, M.D.....Instructor in Medicine
F. L. BADAGLIACCA, M.D.....Instructor in Medicine
F. T. KYPER, M.D.....Assistant in Medicine
W. S. LOVE, JR., A.B., M.D.....Instructor in Medicine
A. A. SUSSMAN, M.D.....Instructor in Medicine
WETHERBEE FORT, M.D.....Assistant in Medicine
M. G. GICHNER, M.D.....Assistant in Medicine
FREDERICK B. DART, M.D.....Assistant in Medicine
W. H. WOODY, M.D.....Assistant in Medicine
THOMAS B. TURNER, M.D.....Assistant in Medicine

GENERAL OUTLINE.

Second Year.

Introduction to clinical medicine.

(a) Introductory physical diagnosis.
(1 hour a week, first semester.)
(2 hours a week, second semester).

(b) Clinical lectures on pathological physiology.
(1 hour a week, second semester).

Third Year.

I. The methods of examination (13 hours a week).
(a) History taking.
(b) Physical diagnosis.
(c) Clinical pathology.
These subjects are taught and practiced in the out-patient department and in the clinical laboratory.

II. The principles of medicine (7 hours a week).
(a) Lectures, clinics and demonstrations in general medicine, neurology, pediatrics and preventive medicine.

III. The principles of therapeutics (2 hours a week).
Lectures and demonstrations in general therapeutics, physical therapeutics and materia medica.

Fourth Year.

The practice of medicine.

I. Clinical clerkship on the medical wards.
(26 hours a week for ten weeks).
(a) Responsibility, under supervision, for the history, physical examination, laboratory examinations and progress notes of assigned cases.
(b) Ward classes in general medicine, the medical specialties, and therapeutics.

II. Clinics in general medicine and the medical specialties.
(6 hours a week).

III. Dispensary work in the medical specialties.

IV. Clinical pathological conferences (1 hour a week).

Medical Dispensary Work.

The medical dispensaries of both the Mercy and the University Hospitals are utilized for teaching in the third year. Each student spends two periods a week of two hours each in dispensary work. The work is done in groups of four to six students under an instructor. Systematic history taking is especially stressed. Physical findings are demonstrated. The stu-

dent becomes familiar with the commoner acute and chronic disease processes.

Physical Diagnosis.

SECOND YEAR. Didactic lectures and practical demonstrations in topographical anatomy and normal physical signs.

THIRD YEAR. The class is divided into small groups, and each section receives instruction for four hours a week for the entire session in the medical dispensaries of the hospitals. The large clinical material of the dispensaries and hospitals is utilized to give each student the opportunity to familiarize himself with the common types of bodily structure, with the normal variations in physical signs and with the physical signs of the chief pulmonary, circulatory and abdominal diseases.

Therapeutics.

THIRD YEAR. General therapeutics and materia medica are taken up and an effort is made to familiarize the student with the practical treatment of disease. The special therapy of the chief diseases is then reviewed. Two hours a week. Dr. Lockard.

The principles of physical therapy are taught in a special lecture and demonstration course consisting of six one-hour periods. Dr. Gichner.

FOURTH YEAR. Special consideration is given to the practical application of therapeutic principles in bedside teaching and the chief therapeutic methods are demonstrated.

Tuberculosis.

During the third year in connection with the instruction in physical diagnosis a practical course is given weekly to sections of the class at the Municipal Tuberculosis Hospital. Stress is laid upon the recognition of the physical signs of the disease, as well as upon its symptomatology and gross pathology.

Syphilis.

THIRD YEAR. During the third year the subject of syphilis will be dealt with in the lecture course.

FOURTH YEAR. An elective course in the therapeutic management of syphilis will be offered in the dispensary.

CLINICAL PATHOLOGY

JOHN G. HUCK, M.D.	Head of Department Assistant Professor of Medicine
H. J. MALDEIS, M.D.	Associate Professor of Medical Jurisprudence
S. R. MILLER, M.D.	Associate Professor of Medicine
L. A. M. KRAUSE, M.D.	Associate in Medicine
F. T. KYPER, M.D.	Instructor in Medicine
M. G. GICHNER, M.D.	Assistant in Medicine

During the third year the student is thoroughly drilled in the technique of the usual clinical laboratory work, so that he is able to perform all routine examination which may be called for during his fourth year, in connection with the work in the wards and dispensary.

The practical work is supplemented by a series of didactic lectures and demonstrations in which the entire teaching staff of the department takes an active part. The microscopical and chemical study of blood, exudates and transudates, gastric juice, spinal fluid, feces and urine are successively taken up, and special attention directed to the clinical significance of the findings.

Clinical parasitology from the standpoint of the infecting agent and the carrier is given careful consideration.

The entire course is thoroughly practical. Each student is provided with a microscope, blood counters and hemoglobinometer for his exclusive use, and every two students with a special laboratory outfit for all routine purposes.

During the fourth year the student applies what he has learned during the preceding year in the laboratories of the various affiliated hospitals. He is also supplied with a laboratory outfit which is sufficiently complete to enable him to work independently of the general equipment. Special instructors are available during certain hours to give necessary assistance and advice.

GASTRO-ENTEROLOGY.

JULIUS FRIEDENWALD, A.M., M.D.....Professor of Gastro-Enterology
T. FRED LEITZ, M.D.....Clinical Professor of Gastro-Enterology
J. HARRY ULLRICH, M.D.....Assistant Professor of Gastro-Enterology
THEODORE H. MORRISON, M.D....Assistant Professor of Gastro-Enterology
MAURICE FELDMAN, M.D.....Associate in Gastro-Enterology
JOSEPH SINDLER, M.D.....Instructor in Gastro-Enterology
Z. MORGAN, M.D.....Instructor in Gastro-Enterology
M. S. KOPPLEMAN, M.D.....Assistant in Gastro-Enterology
N. J. DAVIDOV, M.D.....Assistant in Gastro-Enterology
ALBERT EISENBERG, M.D.....Assistant in Gastro-Enterology
I. S. ZINBERG, M.D.....Assistant in Gastro-Enterology
JOSEPH N. ZIERLER, M.D.....Assistant in Gastro-Enterology
ISIDORE I. LEVY, M.D.....Assistant in Gastro-Enterology
C. D. STEENKEN, M.D.....Assistant in Gastro-Enterology

FOURTH YEAR. Clinics, recitations and demonstrations to the class for one hour a week throughout the session. Dispensary instruction to small groups throughout the entire session. Practical instruction in the differential and clinical diagnosis and demonstrations of the newer methods of diagnosis in gastro-intestinal affections.

PSYCHIATRY.

R. M. CHAPMAN, M.D.....Professor of Psychiatry
H. S. SULLIVAN, M.D.....Associate Professor of Psychiatry
HARRY GOLDSMITH, M.D.....Instructor in Psychiatry

THIRD YEAR. In the third year the student attends fifteen clinical lectures and five clinics which are designed to be introductory to the more intensive work in psychiatry in the fourth year.

FOURTH YEAR. The class is divided into sections for clinical conferences on selected groups of cases. Each student works for a short period as assistant in the Mental Hygiene Clinic and thus gains practical experience of the problems of history taking, examination, and the care of psychiatric patients.

PEDIATRICS.

John Ruhrah, M.D.	Professor of Pediatrics
Charles L. Summers, M.D.	Professor of Pediatrics
Edgar R. Friedenwald, M.D.	Clinical Professor of Pediatrics
C. Loring Joslin, M.D.	Assistant Professor of Pediatrics
W. H. Ingram, M.D.	Associate in Pediatrics
H. H. Warner, M.D.	Associate in Pediatrics
W. J. Todd, M.D.	Instructor in Pediatrics
John H. Traband, M.D.	Instructor in Pediatrics
William F. Geyer, M.D.	Instructor in Pediatrics
I. J. Feinglos, M.D.	Instructor in Pediatrics
W. E. Brent, M.D.	Instructor in Pediatrics
Clarence E. Macke, M.D.	Instructor in Pediatrics
Bernard J. Ferry, M.D.	Assistant in Pediatrics
George E. Wells, M.D.	Assistant in Pediatrics
F. Stratner Orem, M.D.	Assistant in Pediatrics
G. A. Knipp, M.D.	Assistant in Pediatrics
J. J. McGarrell, M.D.	Assistant in Pediatrics
H. A. Rutledge, M.D.	Assistant in Pediatrics
Albert Jaffe, M.D.	Assistant in Pediatrics
R. M. Hening, M.D.	Assistant in Pediatrics
Marie Kovner, M.D.	Assistant in Pediatrics
A. G. Webster, M.D.	Assistant in Pediatrics
Ephraim Meyer, M.D.	Assistant in Pediatrics
Rachel Korotky, M.D.	Assistant in Pediatrics
Elizabeth Sherman, M.D.	Assistant in Pediatrics

Third Year. Instruction during the third year consists of one lecture each week in which infant feeding and the most important diseases of infancy and childhood are especially emphasized. Drs. Summers and Friedenwald.

Fourth Year. During this year a weekly clinical lecture is given where the character of disease is fully demonstrated and the students are afforded an opportunity for personal examination of all cases. In addition ward classes are held weekly where bedside instruction is given. A section of the class also works daily at the Babies' and Children's Clinic. This clinic, which is under the direction of Dr. Summers, has a yearly attendance of more than twenty thousand, and offers an excellent opportunity for study and observation of a wide variety of cases under competent instructors.

Instruction is also given on the Children's Ward at the Mercy Hospital.

NEUROLOGY.

IRVING J. SPEAR, M.D. ..... Professor of Neurology
ANDREW C. GILLIS, A.M., LL.D., M.D. ..... Professor of Neurology
G. M. SETTLE, A.B., M.D. ..... Associate Professor of Neurology
BENJAMIN PUSHKIN, M.D. ..... Assistant Professor of Clinical Neurology
MILFORD LEVY, M.D. ..... Associate in Neurology
J. A. SKLADOWSKY, M.D. ..... Assistant in Neurology
H. W. ROSENTHAL, M.D. ..... Assistant in Neurology

THIRD YEAR. Lectures and recitations one hour each week to the entire class. Instruction in clinical neurology two hours a week at the City Hospital to small groups. By means of didactic lectures and clinical conferences there are considered the commoner types of diseases of the nervous system, the methods of neurological examination, and the relationship of signs and symptoms to pathological conditions. The material at University and Mercy Hospitals is available.

FOURTH YEAR. Clinical Conference, one hour each week to the entire class. This subject is taught at the University and Mercy Hospitals. All cases presented at these clinics are carefully examined; complete written records are made by the students who demonstrate the cases before the class. The cases are usually assigned one or two weeks before they are presented, and each student in the class must prepare one or more cases during the year.

Ward Class Instruction. In small sections at the University and Mercy Hospitals. In these classes the students come in close personal contact with the cases in the wards under the supervision of the instructor.

Dispensary Instruction. Small sections are instructed in the dispensaries of the University and Mercy Hospitals four afternoons each week. In this way students are brought into contact with nervous diseases in their earlier as well as later manifestations.

HYGIENE AND PREVENTIVE MEDICINE.

C. HAMPSON JONES, M.D., C.M. ..... Professor of Hygiene and Public Health
J. F. HOGAN, M.D. ..... Instructor in Hygiene and Public Health

THIRD YEAR. Two lectures a week throughout the session. The lectures will encompass the fundamental subjects: Air,

Water, Soil, Food, Disposal of Wastes, Communicable Diseases, State and Federal Public Health Laws, and Industrial Diseases. Small groups visit the Sydenham Hospital weekly and are given practical instruction in the diagnosis, treatment and isolation of the contagious diseases.

FOURTH YEAR. Small groups visit the City Board of Health Laboratories for practical instruction in the laboratory field and administrative aspects of public health work.

MEDICAL JURISPRUDENCE.

H. J. MALDEIS, M.D.....Associate Professor of Medical Jurisprudence
Baltimore City Post Mortem Physician

FOURTH YEAR. One hour each week for one semester.

Inasmuch as Medical Jurisprudence teaches the application of every branch of medical knowledge to the needs of the law, civil or criminal, this course embraces the following:—Proceedings in criminal and civil prosecution; medical evidence and testimony; identity in its general relations; sexual abnormalities; personal identity; impotence and sterility; rape; criminal abortions; signs of death; wounds in their medico-legal relations; death, natural and homicidal; malpractice; insanity and medico-legal autopsies.

DEPARTMENT OF SURGERY

ARTHUR M. SHIPLEY, Sc.D., M.D.....Professor of Surgery
ALEXIUS MCGLANNAN, A.M., M.D.....Professor of Surgery
JOSEPH H. BRANHAM, M.D.....Professor of Clinical Surgery
NATHAN WINSLOW, A.M., M.D.....Clinical Professor of Surgery
PAGE EDMUNDS, M.D.....Clinical Professor of Industrial Surgery
WALTER D. WISE, M.D.....Clinical Professor of Surgery
JOSEPH W. HOLLAND, M.D.....Clinical Professor of Surgery
FRANK S. LYNN, M.D.....Clinical Professor of Surgery
ELLIOT H. HUTCHINS, A.M., M.D.....Associate Professor of Surgery
THOMAS R. CHAMBERS, A.M., M.D.....Associate Professor of Surgery
R. W. LOCHER, M.D.....Assoc'te Professor of Operative and Clinical Surgery
CHARLES REID EDWARDS, M.D.....Associate Professor of Surgery
E. H. HAYWARD, M.D.....Associate in Surgery
A. M. EVANS, M.D.....Associate in Surgery
F. L. JENNINGS, M.D.....Associate in Surgery
E. S. JOHNSON, M.D.....Associate in Surgery
C. A. REIFSCHNEIDER, M.D.....Associate in Surgery
M. J. HANNA, M.D.....Associate in Surgery
H. M. FOSTER, M.D.....Instructor in Surgery
F. X. KEARNEY, M.D.....Instructor in Surgery

Charles W. Maxson, M.D.	Instructor in Surgery
C. F. Horine, M.D.	Instructor in Surgery
Dwight Mohr, M.D.	Assistant in Surgery
Wm. R. Geraghty, M.D.	Assistant in Surgery
S. Demarco, M.D.	Assistant in Surgery
Clyde Marvel, M.D.	Assistant in Surgery
Everard Briscoe, M.D.	Assistant in Surgery
I. O. Ridgely, M.D.	Assistant in Surgery
H. B. McElwain, M.D.	Assistant in Surgery
D. J. Passagno, M.D.	Assistant in Surgery
J. G. Onnen, M.D.	Assistant in Surgery
W. R. Johnson, M.D.	Assistant in Surgery
Monte Edwards, M.D.	Assistant in Surgery
James Brown, M.D.	Assistant in Surgery
E. W. Hanrahan, A.B., M.D.	Assistant in Surgery
A. V. Buchness, M.D.	Assistant in Surgery
Karl J. Steinmueller, A.B., M.D.	Assistant in Surgery
J. O. Warfield, A.M., M.D.	Assistant in Surgery

The teaching is done in the Anatomical Laboratory and the dispensaries, wards, clinical laboratories and operating rooms of the University and Mercy Hospitals, and in the wards and dead-house of the Baltimore City Hospital.

Instruction is given by means of lectures, recitations, dispensary work, bed-side instruction, ward classes, and clinics. The work begins in the second year, and continues throughout the third and fourth years.

Second Year.

Topographic and Surgical Anatomy. 10 hours a week for the first semester. The course is designed to bridge the gap between anatomy in the abstract, and clinical anatomy as applied to the study and practice of medicine and surgery.

The teaching is done in the anatomical laboratory, and students are required to demonstrate all points, outlines, and regions on the cadaver. Underlying regions are dissected when necessary to bring out outlines and relations of structures.

Didactic Lectures. Two hours a week for one semester, augmented by demonstrations with specimens, charts, and cross section. Dr. Holland.

Laboratory. Eight hours a week for the first semester. Dr. Hanna, assisted by Drs. Brady, Hundley, Warfield, Boyd and Mr. Clark.

Principles of Surgery. This course includes history taking, records of physical examinations and of operations and progress notes; the preparation of surgical dressings, suture materials and solutions. It includes inflammation, infections, ulcers, gangrene, fistulae and sinuses, hemorrhage and shock; the use of splints, bed frames, bone plates, bone grafts, etc., local anaesthesia and the preparation of patients for operations. Lectures and conferences. Two hours per week for one semester to the entire class. Dr. Edwards.

Third Year.

General and Regional Surgery. Principles of surgery and general surgery, three hours a week throughout the year to the entire class, lectures, recitations and clinics. Dr. Shipley.

The class is divided into groups and receives instruction in history-taking, gross pathology, and surgical diagnosis—at the bedside and in the dead-house of the Baltimore City Hospital. Drs. Shipley, Lynn and Reifschneider.

Operative Surgery. Instruction is given in operative surgery upon the cavader and on dogs. The class is divided into sections, and each section is given practical and individual work under the supervision of the instructors. Dr. Frank S. Lynn, assisted by Drs. Nathan Winslow, Locher, Hayward, E. S. Johnson, Foster, Geraghty, Demarco, Horine, Pessagno, Onnen, Maxson, W. R. Johnson, Buchness, Hanrahan, Brown, Steinmueller and Warfield.

Fractures and Dislocations. Twenty-four hours to the entire class. This course consists of instruction in the various forms of fractures and dislocations and their treatment, and serves as a preparatory course for clinical work. Drs. Wise and Jennings.

Surgical Dispensary. Under supervision, the student takes the history, makes the physical examinations, attempts the diagnosis, and, as far as possible, carries out the treatment of the ambulatory surgical cases in the University and in the Mercy Hospitals. Mercy Hospital—Drs. Dwight Mohr, Ridgley, Passagno, Briscoe and McElwain. University Hospital—Drs. Holland, Lynn, Nathan Winslow, Edwards, E. S. Johnson and Foster.

Fourth Year.

Clinics. A weekly clinic will be given at the Mercy and at the University Hospitals to one-half the class throughout the year. As far as possible this is a diagnostic clinic. Mercy Hospital—Dr. McGlannan. University Hospital—Dr. Shipley.

Surgical Pathology. A weekly exercise of one hour at Mercy Hospital for one semester, at which specimens from the operating-room and museum are studied in the gross and microscopically, in relation with the case history. Dr. McGlannan.

Industrial Surgery. Operative and post-operative treatment of accident cases, with instructions as to the relationship between the state, the employee, the employer, and the physician's duty to each. One hour a week to sections of the class throughout the year. Dr. Edmunds.

Clinical Clerkship. The personal study of assigned hospital patients, under supervision of the staffs of University and of Mercy Hospitals, history taking, and physical examination of patients, laboratory examinations, attendance at operations and observation of post-operative treatment.

Ward Classes. Ward class instruction in small groups will consist of ward rounds, surgical diagnosis, treatment and the after care of operative cases. Mercy Hospital—Drs. McGlannan, Wise, Elliot Hutchins, Evans and Chambers. University Hospital—Drs. Shipley, Holland, Edmunds, Lynn and Edwards.

ANAESTHESIA.

Second Year.

Lectures on history of anaesthesia: Ancient and Modern. General physiology of anaesthesia. Special physiology of each anaesthetic agent. Different methods for producing general anaesthesia, with a detailed description of each. The selection of the anaesthetic and method best suited for its administration in particular cases. Difficulties and accidents during and following anaesthesia, their causes, prevention and control. Different methods of resuscitation. Blood pressure: Its significance and bearing on selection of the anaesthetic and use as a guide during anaesthesia.

Eight hours to the entire class. Drs. S. Griffith Davis and W. G. Queen.

Fourth Year.

During the clinics and operations before small groups, each student will be required to observe the administration of anaesthetics and to keep a chart recording blood pressure, pulse and respiration under the direction of an instructor.

DERMATOLOGY.

T. Caspar Gilchrist, M.R.C.S., M.D.....Professor of Dermatology
Melvin Rosenthal, M.D.....Associate Professor of Dermatology
Harry M. Robinson, M.D.....Associate Professor of Dermatology
John R. Abercrombie, A.B., M.D.....Associate in Dermatology
A. C. Monninger, M.D.....Assistant in Dermatology

Clinical conferences one hour each week to entire class. This course will consist of demonstrations of the common diseases of the skin. Dr. Gilchrist.

Dispensary instruction, University Hospital, Mondays, Wednesdays and Fridays in the diagnosis and treatment of the common skin diseases. Drs. Abercrombie, Robinson and Gately. Dispensary instruction, Mercy Hospital. Dr. Rosenthal.

ORTHOPAEDIC SURGERY.

R. Tunstall Taylor, A.B., M.D.....Professor of Orthopaedic Surgery
Albertus Cotton, A.M., M.D.....Professor of Orthopaedic Surgery
Compton Riely, M.D.....Clinical Professor of Orthopaedic Surgery
W. H. Daniels, M.D.....Associate in Orthopaedic Surgery
H. L. Wheeler, M.D.....Instructor in Orthopaedic Surgery
H. L. Rogers, M.D.....Assistant in Orthopaedic Surgery

In this course didactic, clinical, bed-side and out-patient instruction will be given. This instruction is provided in the University Hospital Amphitheater and in the Dispensary, Mercy Hospital and Dispensary and Kernan Hospital and Industrial School for Crippled Children at "Radnor Park," and in the Dispensary of same at 620 West Lombard Street.

Lectures, clinics and quizzes will be held at each of the hospitals once a week. In addition, a weekly bedside clinic will be held for small sections of the class at "Radnor Park."

The course will cover instruction in special methods and instruments required in this surgical specialty, including X-Ray interpretation; Wolff's law; tuberculosis of bones and joints; deformities of the feet; non-tuberculous affliction of bone and joints; the paralyses; the bursal, tendinous and muscular conditions producing orthopaedic affections; rickets, scurvy; osteomalacia; chondro-dystrophies; wry-neck and the use and application of orthopaedic apparatus.

ROENTGENOLOGY AND RADIOTHERAPY.

HENRY J. WALTON, M.D.....Professor of Roentgenology
ALBERTUS COTTON, M.D.....Professor of Roentgenology
CHARLES REID EDWARDS, A.B., M.D.....Associate in Radio Therapy
HOWARD E. ASHBURY, M.D.....Associate in Roentgenology

Instruction is given in the history, physics, and practical application of Roentgen Rays and Radium. Especial effort is made to demonstrate the use of the Roentgen Ray in diagnosis by instruction in both fluroscopy and plate reading. The sections of the fourth year class receive two hours instruction each week.

The student is also taught the practical application of Radium and Roentgen Rays as therapeutic agents. In the X-Ray laboratory and in the hospital wards students are shown the use of these agents in the treatment of disease.

DISEASES OF THE THROAT AND NOSE

EDW. A. LOOPER, M.D.....Clinical Prof. of Diseases of the Throat and Nose
W. F. ZINN, M.D.....Associate Professor of Diseases of Throat and Nose
FRANK B. ANDERSON, M.D.....Associate in Diseases of the Throat and Nose
R. F. MCKENZIE, M.D.....Instructor in Diseases of the Throat and Nose

THIRD YEAR. Instruction to entire class is given in the common diseases of the nose and throat, attention being especially directed to infections of the accessory sinuses, the importance of focal infections in the etiology of general diseases and modern methods of diagnosis. Lectures are illustrated by lantern slides. Dr. Looper.

FOURTH YEAR. Dispensary instruction daily to small sections at the University and the Mercy Hospitals. The student

is given opportunity to study, diagnose and treat practical cases under an instructor. Ward classes and clinical demonstrations are given one and one-half hours weekly throughout the session in the University and the Mercy Hospitals.

GENITO-URINARY DISEASES.

ANTON G. RYTINA, A.B., M.D.....Professor of Genito-Urinary Diseases
W. H. TOULSON, A.B., M.Sc., M.D.
Associate Professor of Genito-Urinary Diseases
HARRIS GOLDMAN, M.D.....Associate in Genito-Urinary Diseases
AUSTIN H. WOOD, M.D.....Associate in Genito-Urinary Diseases
A. J. GILLIS, M.D.....Instructor in Genito-Urinary Diseases
L. K. FARGO, M.D.....Instructor in Genito-Urinary Diseases
H. C. KNAPP, M.D.....Assistant in Genito-Urinary Diseases
H. T. COLLENBERG, M.D.....Assistant in Genito-Urinary Diseases
J. H. COLLISON, M.D.....Assistant in Genito-Urinary Diseases
MONTE EDWARDS, M.D.....Assistant in Genito-Urinary Diseases
L. J. MILLAN, M.D.....Assistant in Genito-Urinary Diseases
WILLIAM EMRICH, M.D.....Assistant in Genito-Urinary Diseases
T. WILLIS GUYTON, M.D.....Assistant in Genito-Urinary Diseases

THIRD YEAR. 8 hours to the entire class. This course is a didactic one in the principles of Genito-Urinary Surgery. Dr. Toulson.

FOURTH YEAR. The course includes urethroscopy, cystoscopy, ureter catheterization, renal functional tests, urography, urine cultures, etc. The teaching consists of clinics in the amphitheater, ward rounds, and attendance by members of the Senior class upon out patients in the dispensary. The dispensary classes are carried on both at the Mercy and the University Hospital dispensaries. In the latter institution, the Maryland State Department of Health conducts a venereal disease clinic, in which 20,133 visits were paid last year. Every variety of venereal disease is here encountered, and this rich wealth of material is available for teaching purposes. In addition to this, a cystocopic clinic is conducted in another part of the dispensary, where the students are given practical instruction in the modern diagnostic methods.

DISEASES OF THE COLON AND RECTUM

G. Milton Linthicum, A.M., M.D.
Professor of Diseases of Rectum and Colon
Charles F. Blake, M.D. ..... Professor of Diseases of Rectum and Colon
J. Dawson Reeder, M.D.
Associate Professor of Diseases of Rectum and Colon
L. J. Rosenthal, M.D.
Associate Professor of Diseases of Rectum and Colon

Third Year. 6 hours to the entire class. This course is for instruction in the diseases of the colon, sigmoid flexure, rectum and anus, and will cover the essential features of the anatomy and physiology of the large intestine as well as the various diseases to which it is subject. Dr. Linthicum.

The class is divided into sections for clinical instruction in the Baltimore City Hospital. Dr. Linthicum.

Fourth Year. Ward and Dispensary instruction is given in the University and Mercy Hospitals where different phases of the various diseases are taught by direct observation and examination. The use of the proctoscope and sigmoidoscope and examination of the rectum and sigmoid is made familiar to each student. Mercy Hospital—Drs. Blake and Rosenthal. University Hospital—Drs. Linthicum and Reeder.

DEPARTMENT OF OBSTETRICS.

J. M. H. Rowland, M.D. ..... Professor of Obstetrics
George W. Dobbin, M.D. ..... Professor of Obstetrics
Bernard Purcell Muse, M.D. ..... Professor of Clinical Obstetrics
Charles E. Brack, M.D. ..... Clinical Professor of Obstetrics
L. H. Douglass, M.D. ..... Associate Professor of Obstetrics
J. McF. Bergland, M.D. ..... Associate Professor of Obstetrics
E. P. Smith, M.D. ..... Associate in Obstetrics
Emil Novak, M.D. ..... Associate in Obstetrics
J. G. M. Reese, M.D. ..... Instructor in Obstetrics
Dudley Pleasants Bowe, M.D. ..... Instructor in Obstetrics
J. G. Murray, Jr., A.B., M.D. ..... Instructor in Obstetrics
M. A. Novey, A.B., M.D. ..... Instructor in Obstetrics
Maurice Lazenby, M.D. ..... Assistant in Obstetrics
J. J. Erwin, M.D. ..... Assistant in Obstetrics
Isadore H. Siegel, M.D. ..... Assistant in Obstetrics

Third Year. Three lectures and recitations each week by Drs. Dobbin, Bergland, Novak, Murray, Douglass and Row-

land to entire class. Manikin Work, Drs. Brack, Smith and Erwin to sections of class at Mercy Hospital, and Drs. Douglass, Reese, Bowe, Novey and Rowland at University Hospital.

FOURTH YEAR. Clinical Conference. One hour each week Drs. Rowland, Douglass, Murray and Lazenby.

Ward Classes. Six hours per week for five weeks to sections of class at University Hospital. Drs. Douglass, Reese, Bowe, Novey and Rowland at University Hospital.

DEPARTMENT OF GYNECOLOGY.

WILLIAM S. GARDNER, M.D.	Professor of Gynecology
J. MASON HUNDLEY, M.M.	Professor of Clinical Gynecology
HUGH BRENT, M.D.	Associate Professor of Gynecology
ABRAHAM SAMUELS, M.D.	Associate Professor of Gynecology
GEO. A. STRAUSS, M.D.	Associate in Gynecology
R. G. WILLSE, M.D.	Associate in Gynecology
T. K. GALVIN, M.D.	Assistant in Gynecology
J. M. HUNDLEY, JR., M.D.	Assistant in Gynecology
LEO. BRADY, M.D.	Assistant in Gynecology

THIRD YEAR. *Didactic Work.* A course of thirty lectures and recitations.

Clinical Work. Six hours weekly for one trimester. In this course the student writes the clinical history of each patient in the ward, makes a general physical examination, including the blood and urine, before the patient is brought before the class. One student under supervision gives the anaesthetic, a pelvic examination is made by six students, and any operation required is then done before a section of the class small enough to see clearly what is being done and how it is done. On a subsequent day the whole group examine microscopically sections prepared from material removed from patients that have been before them.

DEPARTMENT OF OPHTHALMOLOGY AND OTOLOGY.

HARRY FRIEDENWALD, A.B., M.D.	Prof. of Ophthalmology and Otology
J W. DOWNEY, M.D.	Clinical Professor of Otology
M. RANDOLPH KAHN, M.D.	Associate Professor of Ophthalmology
H. K. FLECK, M.D.	Associate in Ophthalmology
JOSEPH I. KEMLER, M.D.	Associate in Ophthalmology

THIRD YEAR. First semester, *Course in Diseases of the Eye.* Sept. 28th to January 23rd. Dr. Harry Friedenwald.

Course in Diseases of the Ear, second semester. Dr. Downey.

Practical Course in Ophthalmoscopy, once weekly, in sections. Dr. Kemler.

FOURTH YEAR. *Clinics in Diseases of the Eye and Ear,* weekly. Drs. Harry Friedenwald and Downey.

Ward Studies of ocular and aural lesions associated with general medical diseases, once weekly in sections. Dr. Friedenwald.

Dispensary Instruction, daily to small sections. Drs. Kahn, Fleck, Downey and Kemler.

The courses in Ophthalmology and Otology are designed to familiarize the students with the common diseases of the eye and ear, their recognition and treatment, with a view to meet the needs of the general practitioner. Special emphasis is laid upon the relation between diseases of the eye and the ear and systemic diseases and diseases of other organs.

HISTORY OF MEDICINE.

A course of ten lectures will be given on the History of Medicine. These lectures will be given once weekly during March, April and May by Dr. John R. Oliver.

FIRST YEAR SCHEDULE—First Semester. 1926-1927

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 9 to 10	Biological Chemistry C. H.	Laboratory Histology & Embryology P. & S. 32	Laboratory Histology & Embryology P. & S. 32	Laboratory Histology & Embryology P. & S. 32	Biological Chemistry C. H.	Anatomy Laboratory & C. H.
10 to 11						
11 to 12.00	Laboratory Biological Chemistry Section B			Lunch and Transfer	Laboratory Biological Chemistry Section A	
12 M. to 1 P. M.		Lunch and Transfer	Lunch and Transfer			
1 to 1.30	Lunch			Biological Chemistry A. H.	Lunch	
1.30 to 2	Anatomy	Anatomy	Anatomy		Anatomy	
2 to 4.30	C. H., A. H., & Laboratory	A. H., & Laboratory	C. H., A. H., & Laboratory	Anatomy C. H., A. H., & Laboratory	C. H., A. H., & Laboratory	
4.30 to 5						

FIRST YEAR SCHEDULE—Second Semester. 1926-1927

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 8.30 to 9.30	Biological Chemistry C. H.	Laboratory Histology & Embryology P. & S. 32	Laboratory Histology & Embryology P. & S. 32	Laboratory Histology & Embryology P. & S. 32	Biological Chemistry C. H.	Anatomy Laboratory & C. H.
9.30 to 10.30						
10.30 to 11.30	Laboratory Biological Chemistry Section B			Transfer	Laboratory Biological Chemistry Section A	
11.30 to 12.30 P. M.		Physiology P. & S. 34		Physiology A. H.		
12.30 to 1	Lunch	Lunch and Transfer	Lunch and Transfer	Lunch	Lunch	
1 to 1.30				Biological Chemistry A. H.		
1.30 to 2	*Anatomy	Anatomy	Anatomy		Anatomy	
2 to 4.30	C. H., A. H., & Laboratory	A. H., & Laboratory	C. H., A. H., & Laboratory	Anatomy C. H., A. H., & Laboratory	C. H., A. H., & Laboratory	
4.30 to 5						

A. H. Anatomical Hall—Upper Hall. N. E. Cor. Lombard and Greene Streets.
C. H.—Chemical Hall—Lower Hall. N. E. Cor. Lombard and Greene Streets.
Anatomy Laboratory—Third Floor, Gray Laboratory. Lombard and Greene Streets.
Biological Chemistry Laboratory—Third Floor, Dental Building, Lombard and Greene Streets.
P. & S.—N. W. Cor. Calvert and Saratoga Streets. Rooms indicated on Second Floor.
* Neural Anatomy after April 9, 1927.

SECOND YEAR SCHEDULE—First Semester, 1926-1927

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 9 to 10	Biological Chemistry C. H.	Laboratory Biological Chemistry Section B	Physiology A. H.	Lahoratory Biological Chemistry Section A	Biological Chemistry C. H.	
10 to 11	Physiology C. H.		Biological Chemistry A. H.		Pharmacology C. H.	Physiology A. H.
11 to 12	Pathology C. H.	Physiology Section A	Pharmacology A. H.	Pharmacology Section B	Pathology C. H.	Pharmacology A. H.
12 M. to 12.30 P. M.	Lunch	Lunch and Transfer	Lunch and Transfer	Surgery C. H.	Surgery C. H.	
P. M. 12.30 to 1						
1 to 1.30		Laboratory Immunology & Serology P. & S. 32	Laboratory Immunology & Serology P. & S. 32	Lunch and Transfer	Lunch and Transfer	
1.30 to 2.30	Laboratory Pharmacology Section A Physiology Section B			Medicine P. & S. 33	Immunology & Serology P. & S. 34	
2.30 to 3.30				Laboratory & P. & S. 33 Surgical Anatomy	Laboratory & P. & S. 33 Surgical Anatory	
3.30 to 4		Laboratory P. & S. Surgical Anatomy	Laboratory P. & S. Surgical Anatomy			
4 to 5.30						

SECOND YEAR SCHEDULE—Second Semester, 1926-1927

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 8.30 to 9.30	Biological Chemistry C. H.	Laboratory Biological Chemistry Section B	Physiology A. H.	Laboratory Biological Chemistry Section A	Biological Chemistry C. H.	
9.30 to 10.30	Physiology C. H.		Biological Chemistry A. H.		Pharmacology C. H.	Physiology A. H.
10.30 to 11.30	Pathology C. H.	Physiology Section A	Pharmacology A. H.	Pharmacology Section B	Pathology C. H.	Pharmacology A. H.
11.30 to 12.00	Lunch	Lunch	Lunch	Lunch	Lunch	
P. M. 12 to 1	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	Medical Clinic Amp.
1 to 2	Pathology	Pathology	Pathology	Pathology	Pathology	
2 to 3			Physical Diagnosis			
3 to 4	Laboratory Pharmacology Section A	Laboratory Pharmacology Section A Physiology Section B	Univ. Hosp. Disp.	Laboratory Pharmacology Section B Physiology Section A	Laboratory Pharmacology Section B	
4 to 5						

A. H.—Anatomical Hall, Upper Hall. N. E. Cor. Lombard and Greene Streets.
C. H.—Chemical Hall—Lower Hall, N. E. Cor. Lombard and Greene Streets.
Laboratories:
Biological Chemistry—Third Floor, Dental Building, Lombar dand Greene Streets.
Pathology—Third Floor, Dental Building, Lombard and Greene Streets.
Pharmacology—Second Floor, Gray Laboratory, Lombard and Greene Streets.
Physiology—First Floor, Gray Laboratory, Lombard and Greene Streets.
Amp.—Amphitheatre—University Hospital, S. W. Cor. Lombard and Greene Streets.
P. & S.—N. W. Cor. Calvert and Saratoga Streets. Rooms indicated on Second and Fourth Floors.

THIRD YEAR SCHEDULE

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 8.30 to 9.30	Therapeutics A. H.	Pathology C. H.	Medicine C. H.	Surgery C. H.	Pathology A. H.	Surgery C. H.
9.30 to 10.30	Obstetrics A. H.	Surgery C. H.	Obstetrics C. H.	Medicine C. H.	Medicine A. H.	Therapeutics C. H.
10.30 to 1 P. M.	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch and Transfer	Physical Diagnosis Operative Surgery Dispensary Lunch
1 to 2	Medical Clinic Amp.	Surgery C. H.	Neurology P. & S. 33	Gynecology P. & S. 34		Transfer
2.15 to 3.15	Pathology Laboratory	Pathology Laboratory	2.30-4.30 Section A Clinical Medicine Surgery Gross Pathology at Bay View	*2 to 3.15 Eye P. & S. 34	1.15 to 4.15 Clinical Pathology Laboratory P. & S. 32	2-4 Section B Clinical Medicine Surgery Gross Pathology at Bay View
3.15 to 4.15				Clinical Pathology P. & S. 34		
4.15 to 5.15	Pediatrics A. H.	*Obstetrics C. H. **Ear C. H.	2.15-4.15 Section B Group Work Ophthalmoscopy Practical Obstetrics Univ. Hosp.	Preventive Medicine Legal Medicine Mental Hygiene P. & S. 34	Preventive Medicine P. & S. 34	

From 10.30 A. M. to 1.00 P. M. the class is divided into two sections, one section reporting at Calvert and Saratoga Streets, the other at Lombard and Greene Streets.

C. H.—Chemical Hall—N. E. Cor. Lombard and Greene Streets.

A. H.—Anatomical Hall—N. E. Cor. Lombard and Greene Streets.

Amp.—Amphitheatre—University Hospital, S. W. Cor. Lombard and Greene Streets.

P. & S.—N. W. Cor. Calvert and Saratoga Streets. Rooms indicated on Second Floor.

At the beginning of the second semester Section "A" at Bay View on Saturdays, 2-4 P. M., and University Hospital on Wednesdays, 2.15-4.15 P. M.; Section "B" at Bay View on Wednesdays, 2.30-4.30 P. M.

* First Semester.

** Second Semester.

FOURTH YEAR SCHEDULE

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
A. M. 8.30 to 11.00	Ward Classes Medicine Surgery Obstetrics	Ward Classes Medicine Surgery Gynecology	Ward Classes Medicine Surgery Obstetrics	Ward Classes Medicine Surgery Gynecology	Ward Classes Medicine Surgery Obstetrics	Ward Classes Medicine Surgery
11.00 to 12.00	Orthopaedic Surgery **Univ. Sec. Amp.** **P. & S. Sec. 51**	**Medical Clinic** **Univ. Sec. Amp.** Surgical Pathology **P. & S. Sec. 40**	Clinical Pathological Conference **Univ. Sec. C. H.** **P. & S. Sec. 33**	Surgical Clinic **Univ. Sec. Amp.** **P. & S. Sec. 51**	**Medical Clinic** **Univ. Sec. Amp.** **P. & S. Sec. 33**	**Pediatrics Clinic** **Univ. Sec. Amp.** **P. & S. Sec. 33**
P. M. 12 to 2	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary
2.15 to 3.15	Dermatology Clinic (Full Class at Univ. Hosp.) **Amp.**	Neurology Clinic **Univ. Sec. Amp.** **P. & S. Sec. 33**	Eye and Ear Clinic (Full Class at Univ. Hosp.) **Amp.**	Obstetrical Clinic (Full Class at Univ. Hosp.) **Amp.**	Gastro-Enterology Clinic (Full Class at Univ. Hosp.) **Amp.**	Genito-Urinary Clinic **P. & S. Sec. 51**
3.30 to 5.00	P. & S. Sec. Ward Classes Medicine **Urology** **Eye and Ear**	Ward Classes Therapeutics Proctology Radiotheraphy	P. & S. Sec. Ward Classes Medicine Roentgenology Preventive Medicine	Ward Classes Medicine Nose & Throat Physical Therapeutics	Ward Classes Orthopaedic Surgery Neurology Psychiatry	
3.30 to 5.00	Univ. Sec. Ward Classes Medicine Urology		Univ. Sec. Ward Classes Medicine Roentgenology Eye and Ear	5 to 6 P. M. March, April and May History of Medicine C. H.		

The Senior Class is divided into two sections, which report, one at Lombard and Greene Streets, the other at Calvert and Saratoga Streets, for one semester each, then rotate.

Each section of the class is divided into three groups—Medical, Surgical, and Special. These groups will rotate on the following dates:

FIRST SEMESTER	SECOND SEMESTER
1st period, Sept. 27 to Oct. 30.	1st period, Jan. 24 to Feb. 26.
2nd period, Nov. 1 to Dec. 4.	2nd period, Feb. 28 to Apr. 9.
3rd period, Dec. 6 to Jan. 22.	3rd period, Apr. 11 to May 14.

C. H.—Chemical Hall—N. E. Cor. Lombard and Greene Streets.
Amp.—Amphitheatre—University Hospital.
P. & S., 33, 34—Second Floor, Calvert and Saratoga Streets.
P. & S., 40, 51—Fourth Floor, Calvert and Saratoga Streets.

REQUIREMENTS FOR MATRICULATION

Admission to the course in medicine is by a completed Medical Student Certificate issued by the Registrar of the University of Maryland. This certificate is obtained from the Registrar on the basis of satisfactory educational credentials, and is essential for admission to any class.

The requirements for the issuance of the Medical Student Certificate are:

(a) The completion of a standard four-year high school course or the equivalent, and in addition, at least

(b) Two years or sixty semester hours of college credits, including chemistry, biology, physics and English.

Women are admitted to the School of Medicine of this University.

(A) HIGH SCHOOL REQUIREMENTS.

Graduation from an accredited high or preparatory school after pursuing a four-year course based upon an eight-year elementary course or its full equivalent as demonstrated by entrance examinations.

At least fifteen units must be offered‡

SCHEDULE OF SUBJECTS REQUIRED OR ACCEPTED FOR ENTRANCE TO THE PRE-MEDICAL COLLEGE COURSE

Subjects	Units*	Required
GROUP I, ENGLISH—		
Literature and Composition	3-4	3
GROUP II, FOREIGN LANGUAGES—		
Latin	1-4	2†
Greek	1-3	
French or German	1-4	
Other foreign languages	1-4	

Group III, Mathematics—		
Elementary algebra	1	1
Advanced algebra	½-1	.....
Plane geometry	1	1
Solid geometry	½	.....
Trigonometry	½	.....
Group IV, History—		
Ancient history	1	
Medieval and modern history	1	
English history	1	1
American history	½-1	
Civil government	½-1	
Group V, Science—		
Botany	½-1	
Zoology	½-1	
Chemistry	1	
Physics	1	1
Physiography	½-1	
Physiology	½-1	
Astronomy	½	
Geology	½-1	
Group VI, Miscellaneous—		
Agriculture	1-2	.....
Bookkeeping	½-1	.....
Business law	½	.....
Commercial geography	½-1	.....
Domestic science	1-2	.....
Drawing, freehand and mechanical	½-2	.....
Economics and economic history	½-1	.....
Manual training	1-2	.....
Music: Appreciation or harmony	1-2	.....

*A unit is the credit value of at least thirty-six weeks' work of four or five recitation periods per week, each recitation period to be not less than forty minutes. In other words, a unit represents a year's study in any subject in a secondary school constituting approximately a quarter of a full year's work. A satisfactory year's work in any subject cannot be accomplished under ordinary circumstances in less than 120 sixty-minute hours, or their equivalent.

†Both of the required units of foreign language must be of the same language, but the two units may be presented in any one of the languages specified.

‡Of the fifteen units of high school work, nine units are required, as indicated in the foregoing schedule; the remainder may be made up from any of the other subjects in the schedule, provided that at least eleven units must be offered in Groupe I-V.

(B) DETAILS OF THE COLLEGE REQUIREMENT.

a. The preliminary college course shall extend through two college sessions of at least thirty-two weeks each of actual instruction, including final examinations.

b. In excellence of teaching and in content, the work of this preliminary college course shall be equal to the work done in the freshman and sophomore years in standard colleges and universities.

c. This preliminary college course shall include courses in physics, chemistry, biology, and English, each course to embrace at least six, eight or twelve hours of work in each subject, as shown in the schedule following.

SCHEDULE OF SUBJECTS OF THE TWO-YEAR PRE-MEDICAL COLLEGE COURSE.

Sixty Semester Hours Required

REQUIRED COURSES:	*Semester Hours*
Chemistry (a)	12
Physics (b)	8
Biology (c)	8
English Composition and Literature (d)	6

COURSES STRONGLY URGED:

A modern foreign language.
Comparative vertebrate anatomy.
Psychology.
Social science.

A semester hour is the credit value of sixteen weeks' work consisting of one lecture or recitation period per week, each period to be of not less than fifty minutes' duration net, at least two hours of laboratory work to be considered as the equivalent of one lecture or recitation period.

(a) CHEMISTRY. Twelve semester hours required, of which at least eight semester hours must be in general inorganic chemistry, including four semester hours of laboratory work. In the interpretation of this rule, work in qualitative analysis may be counted as general inorganic chemistry. The remaining four semester hours required shall consist of work in organic chemistry.

(b) PHYSICS. Eight semester hours required, of which at least two must be laboratory work. This course presupposes a knowledge of plane trigonometry.

(c) BIOLOGY. Eight semester hours required, of which four must be laboratory work. This requirement may be satisfied by a course of eight semester hours in either general biology or zoology, or by courses of four semester hours each in zoology and botany, but not by botany alone.

(d) ENGLISH COMPOSITION AND LITERATURE. The usual introductory college course of six semester hours, or its equivalent, is required.

COMBINED COURSE IN ARTS AND MEDICINE.

A combined seven years' curriculum is offered, leading to the degrees of Bachelor of Science and Doctor of Medicine. The first three years are taken in residence at College Park, and the last four years in Baltimore, at the School of Medicine. The premedical curriculum constitutes the first two years' work and the third year follows a general outline of prescribed and elective courses approved by the chairman of the premedical committee and the dean of the College of Arts and Sciences.

Upon the successful completion of the first year in the School of Medicine, and upon the recommendation of the dean, the degree of Bachelor of Science may be conferred by the College of Arts and Sciences at College Park.

Students are urged to consider carefully the advantages this combination course offers over the minimum requirements of the two years. By completing three years the training may be gradually broadened by a wider latitude in the election of courses in the arts subjects.

POST-GRADUATE STUDENTS.

Graduates in medicine desiring to take the work of the senior year without being candidates for the degree and, therefore, without examination, may receive a certificate of attendance on completing the full course satisfactorily.

The requirements for graduates in medicine admitted to the fourth year class as candidates for the degree of Doctor of Medicine are the same as those enforced against undergraduates admitted to advanced standing.

Summer Post-Graduate Courses—In the April number of the Bulletin detailed announcement will be made of the Post-graduate Summer Courses.

RULES.

1. All students are required to take the spring examinations unless excused by the Dean. No student will be permitted to advance from a lower to a higher class with conditions.

2. Should a student be required to repeat any year in the course he must pay regular fees.

3. A student failing in final examinations for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and to take examination in such other branches as may be required, should he be again permitted to enter the school as a candidate for graduation.

4. The general fitness of a candidate for graduation will be taken into consideration by the Faculty as well as the results of his examination.

5. All students entering the School of Medicine of the University of Maryland are required to provide themselves with microscopes of a satisfactory type.

A standard microscope of either Bausch & Lomb, Leitz, Spencer Lens or Zeiss make, fitted with the following attachments, will fill the requirements:

Triple nose piece.	10 x and 5 x Oculars.
Wide aperture stage.	16mm. and 4mm. Objectives.
Quick screw condenser (Abbe).	1.9mm. 1.25 N.A. Oil Immersion Lens.

All the above rules, as well as the fees stated below, relate to the year ending June 5, 1927, only. The right is reserved to make changes in the curriculum, the requirements for graduation, the fees and in any of the regulations whenever the Faculty deem it expedient.

FEES.

Matriculation fee (paid once)	$10.00
Tuition fee (each year) for residents of Maryland	250.00
Tuition fee (each year) for non-residents	350.00
Laboratory fee (each year)	20.00
Special and re-examination fee	5.00
Graduation fee	10.00

No fees are returnable.

The above fees apply to all students who matriculate in this institution in any class for the session beginning September 27, 1926.

All students, after proper certification, are required to register at the Registrar's office. The last date of registration is October 4, 1926.

Matriculation, laboratory and tuition fees for the first semester shall be paid at the time of registration, and for the second semester on or before February 6th, 1927.

Failure to meet these conditions will automatically debar the student from attendance on classes and other privileges of the University.

Students who fail to pay the tuition and other fees, on or before the last day of registration, for each term or semester, as stated in the catalogue, will be required to pay as an addition to the fees required the sum of Five ($5.00) Dollars and if the payment so required shall not be paid before twenty (20) days from the beginning of said term or semester, the student's name shall be stricken from the rolls.

Students who are minors are considered to be resident students, if at the time of their registration, their parents or guardians have been residents of this state for at least one year.

Adult students are considered to be resident students, if at the time of their first registration they have been residents of this state for at least one year.

The status of the residence of a student is determined at the time of his first registration in the University and may not thereafter be changed by him unless his parents or guardians move to and become legal residents of this State.

PRIZES AND SCHOLARSHIPS.

FACULTY PRIZE.

To stimulate study among the candidates for graduation, the Faculty offers a Gold Medal to the candidate who secures the highest average during the four years of his course. Certificates of Honor are awarded to the five candidates standing next highest.

DR. JOSE L. HIRSH MEMORIAL PRIZE.

A prize of $50.00 is given each year by Mrs. David Myers as a memorial to the late Dr. Jose L. Hirsh, formerly Professor of Pathology in this School, to the student in the third year who has done the most satisfactory work in Pathology during his second and third years.

SCHOLARSHIPS.

The Dr. Samuel Leon Frank Scholarship.

(Value $125.00)

This scholarship was established by Mrs. Bertha Rayner Frank as a memorial to the late Dr. Samuel Leon Frank, an alumnus of this University.

It is awarded by the Trustees of the Endowment Fund of the University each year upon nomination by the Medical Council, "to a medical student of the University of Maryland, who, in the judgment of said Faculty, is of good character and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student who has successfully completed one year's work in this school, and no student may hold such scholarship for more than two years.

The Charles M. Hitchcock Scholarships.

(Value, $125.00 each)

Two scholarships were established from a bequest to the School of Medicine by the late Charles M. Hitchcock, M.D., an alumnus of the University.

These scholarships are awarded annually by the Trustees of the Endowment Fund of the University upon nomination by the Medical Council to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Faculty satisfactory evidence of a good moral character and of inability to continue the course without pecuniary assistance.

The Randolph Winslow Scholarship.

(Value, $125.00)

This scholarship was established by Prof. Randolph Winslow, M.D., LL.D.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Medical Council, to "a needy student of the Senior, Junior, or Sophomore Class of the Medical School."

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship."

"He must be a person of good character and must satisfy the Medical Council that he is worthy of and in need of assistance."

The Dr. Leo Karlinsky Scholarship.

(Value, $200.00)

This scholarship was established by Mrs. Ray Mintz Karlinsky as a memorial to her husband, the late Dr. Leo Karlinsky, an alumnus of this University.

The scholarship is awarded to a second year student who at the end of the first year passes the best examination in Anatomy, Histology, Embryology and Bacteriology.

The University Scholarships.

Two scholarships are awarded by the University. One to a student of the College of Arts and Sciences appointed by the President, to be held for only one year; the other, which entitles the holder to exemption from payment of the tuition fee of the year, is awarded annually by the Medical Council to a student of the Senior Class who presents to the Medical Council satisfactory evidence that he is of good moral character and is worthy of and in need of assistance to complete the course.

Frederica Gehrmann Scholarship.

This scholarship was established by the bequest of the late Mrs. Frederica Gehrmann and entitles the holder to exemption from payment of tuition fees. The scholarship is awarded to a third year student who at the end of the second year passes the best practical examination in Anatomy, Physiology, Biological Chemistry, Pharmacology, Pathology, Immunology and Serology.

The Clarence and Genevra Warfield Scholarships.

(Valuation, $300.00 each)

There are five scholarships established by the Regents from the income of the fund bequeathed by the will of Dr. Clarence Warfield.

Terms and Conditions: These scholarships will be available to students of any of the classes of the course in medicine. Preference is given to students from the counties of the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners.

Any student receiving one of these scholarships must, after graduation and a year's interneship, agree to undertake the practice of medicine, for a term of two years, in the county to which the student is accredited or in a county selected by the Council. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the council, the money advanced by the

Regents shall be refunded. A bond in the amount of $1,200, the expense of which is borne by the Fund, must be filed by the student accepting one of these scholarships for faithful performance of the conditions imposed.

Israel and Cecilia E. Cohen Scholarship.

(Value, $250.00)

This scholarship was established by Miss Eleanor S. Cohen in memory of her parents, Israel and Cecilia E. Cohen. Terms and conditions:

This scholarship will be available to students of any one of the classes of the course in Medicine; preference is given to students of the counties of the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners. Any student receiving one of these scholarships must, after graduation and a year's internship, agree to undertake the practice of medicine for a term of two years in the county to which the student is accredited, or in a county selected by the Council.

ANNUAL HOSPITAL APPOINTMENTS.

On February first of each session the following annual appointments are made from among the graduates of the school:

TO THE UNIVERSITY HOSPITAL

Two Resident Surgeons.
Two Resident Physicians.
One Resident Gynecologist.
Two Resident Obstetricians.
Thirteen Junior Residents on a Rotating Service.

A number of students are appointed each year, at the close of the session, as Clinical Assistants in the University Hospital for the summer months.

TO THE MERCY HOSPITAL

Chief Resident Physician.
One Assistant Resident Physician.
Chief Resident Surgeon.
Five Assistant Resident Surgeons.
One Resident Gynecologist.
One Resident Obstetrician.
Eight Junior Residents on a Rotating Service.

NOTICE TO STUDENTS.

The personal expenses of the students are at least as low in Baltimore as in any large city in the United States. The following estimates of a student's personal expenses for the academic year of eight months have been prepared by students, and are based upon actual experience.

Items	*Low*	*Average*	*Liberal*
Books	$27	48	75
College Incidentals	20	20	20
Board, eight months	200	250	275
Room rent	64	80	100
Clothing and laundry	50	80	150
All other expenses	25	50	75
Total	$386	$529	$695

Students will save time and expense upon their arrival in the city by going direct to the School of Medicine on the University grounds, N. E. corner of Lombard and Greene Streets, where the Superintendent of Buildings, who may be found at his office on the premises, will furnish them with a list of comfortable and convenient boarding houses suitable to their means and wishes.

The Dean will, if desired, attend to the collection of checks and drafts for students.

For further information, apply to

J. M. H. ROWLAND, M. D., *Dean*,

Lombard and Greene Streets.

MATRICULATES, UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, 1925-26.

FOURTH YEAR CLASS.

Anker, Harry.....Ohio
Askin, John A., A.B.....Maryland
Ballard, Margaret Byrnside....West Virginia
Beachley, Jack Henson.....Maryland
Blough, Homer Chester, B.S.....Pennsylvania
Bronstein, Irving.....New York
Calvin, Warren Elwood, B.S.....Maryland
D'Angelo, Antonio Francesco....Rhode Island
DeVincentis, Henry.....New Jersey
Diamond, H. Elias, B.S.....New York
DiPaula, Frank Rosario, A.B.....Maryland
Dyer, Newman Houghton, B.S.,
West Virginia
Eanet, Paul .....Maryland
Edmonds, Charles William.....Maryland
Elliott, Julian Carr, A.B.....Virginia
England, Welch, B.S.....West Virginia
*Finkelstein, Abraham Harry.....New York
Freedman, Herman.....New Jersey
Freedman, Max.....New Jersey
Freuder, Arthur Nathan.....New York
Geraghty, Francis Joseph, A.B.....Maryland
Gerber, Isadore Earle, A.B.....Maryland
Gordon, Abel, A.B.....New Jersey
Gorham, Herbert Jenkins....North Carolina
Graham, John Wirt, A.B.....Maryland
Helfond, David Mathew, B.S.....New York
Hendrix, Nevins Byford, A.M.....Maryland
Hibbitts, John Thomas.....Maryland
Hyman, Calvin, A.B.....Maryland
Jensen, Jacob Roed, B.S.....Denmark
Johnson, Philip, B.S.....West Virginia
Jolson, Meyer Stanley, A.B.....Maryland
Knapp, Alphonse Joseph, A.B.....Maryland
Krosnoff, John Alexander, B.S.,
Pennsylvania
Lavy, Louis Theodore.....Maryland
Leake, Everette Majjette....North Carolina
Levin, H. Edmund, B.S.....Maryland
Levin, Isadore Leonard, A.B.....Ohio
Levin, Joseph.....New Jersey
Loftin, William Frank English, A.B.,
North Carolina
Lumpkin, Lloyd Uber, B.S.....Maryland
Lusby, Frank Farrier, A.B.....Maryland
Manginelli, Emanuel Alfred.....New York
Merkel, Walter Clarence, A.B.,
Pennsylvania
Miller, Harry G.....New York
Moriconi, Albert Francis.....New Jersey
Polsue, William Clewell.....West Virginia
Rattenni, Arthur.....Rhode Island
Rosenberg, Albert Abraham....Pennsylvania
Rosenfeld, Max Harry, A.B.....Maryland
Rothberg, Abraham S., B.S.....New York
Sashin, David.....New York
Sax, Benjamin J.....New York
Schenker, Paul.....Maryland
Schmukler, Jacob.....New Jersey
Schneider, David, A.B.....Maryland
Schuman, William, A.B.....Maryland
Schwartz, Ralph Alfred.....New Jersey
Scullion, Arthur Anthony, B.S.,
New Jersey
Sherman, Elizabeth Bowman, A.B.,
Virginia
Spano, Frank.....New Jersey
Tayntor, Lewis Olds, Ph. C.....Pennsylvania
Teagarden, Ersie Van, B.S.....West Virginia
Teitelbaum, Maurice L.....New York
Tobias, Herbert Ramsay.....Maryland
Trubek, Max, A.B.....New Jersey
Weinstein, Samuel.....New Jersey
Weiss, Louis Leo.....New York
Weseley, Louis Jerome.....New York
Whicker, Guy Lorraine, A.B.,
North Carolina
Wolfe, Samuel Benjamin.....Maryland

*Did not complete year.

THIRD YEAR CLASS, 1925-26.

Adzima, Joseph Matthew.....Connecticut
Aptaker, Albert Jack.....New York
Armacost, Joshua Harper.....Maryland
Ball, Claude Russell, B.S.....West Virginia
Bankhead, John Marion, B.S.,
South Carolina
Barnett, Edwin Dwight, A.B.....California
Basil, George Chester, Ph.G.....Maryland
Belsky, Hyman.....New York
Benesunes, Joseph George, A.B.....Maryland
Bialostosky, Julius, B.S.....New York
Birnbaum, Joseph Osias.....New York
Cadden, John Francis, Jr.....West Virginia
Carey, Thomas Nelson.....Maryland
Chase, William Wiley, A.B.....Maryland
Clemson, Earle Princeton.....Maryland
Cohen, Bernard J., Ph.G.....Maryland
Cohen, Morris Daniel.....New York
Condry, Raphael Joseph, B.S.,
West Virginia
Covington, Elijah Eugene....North Carolina
Davis, Henry Vincent.....Maryland
Donchi, Sol Marvin, B.S.....New Jersey
Eliason, Harold William.....West Virginia
Feldman, Jacob.....New York
Fidler, Kemp Ardvern, B.S.....West Virginia
Friedman, Meyer Henry.....New Jersey
Garner, Wade Hampton, B.S.....Alabama
Gellar, Abraham, B.S.....New York
Gill, Charles Edward.....Delaware
Gillis, Francis Winfred.....Maryland
Ginsberg, Henry.....Maryland
Glick, Bernard.....New Jersey
Goldberg, Isidore.....New Jersey
Goldstein, Milton Joseph.....New York
Heisley, Rowland S.....Maryland
Hewitt, John Frank, A.B.....Maryland
Hoke, Dwight Moody, B.S.....West Virginia
Hummel, Ira Lee Cottrell.....New Jersey
Iglitzin, Maurice Abraham.....New York
Johnson, Jesse Raymond, B.S.,
West Virginia
Kahan, Philip J.....New York
Karns, Clyde Filmore, B.S.....Maryland
Kayser, Fayne Albert, B.S.....West Virginia
Klawans, Maurice Francis.....Maryland
Kutner, Charles.....New Jersey
Lassman, Samuel, B.S.....New York
Lazow, Sol M.....New York
Lenson, Byruth King (Mrs.).....Maryland
Leyko, Julius Joseph, A.B.....Maryland
Lilly, Goff Platt.....West Virginia
Mattikow, Bernard, B.S.....New York
Milhoan, Asa Wade, B.S.....West Virginia
Misenheimer, Ed Alexander..North Carolina
Moran, John Edward, Ph.G....Massachusetts
Morris, Francis Kailer, A.B.....Maryland
Nussbaum, Samuel.....New York
Peake, Clarence William.....Kentucky
Phillips, John Roberts, A.B.....Maryland
Reifschneider, Herbert E., A.B.....Maryland
Saffell, James Glen.....Maryland
Schnierer, Samuel Benjamin.....Connecticut
Schwedel, John Bernard.....Maryland
Sparta, Anthony.....Pennsylvania
Staton, Hilliard Vincent.....North Carolina
Stonesifer, Charles Hiram, A.B.....Maryland
Strayer, Helen C., A.B.....Maryland
Swank, James Levy, B.S.....Pennsylvania
Swartzwelder, Wallace Ray....Pennsylvania
Talbot, Henry Pierce.....Alabama
Tayloe, Gordon Bennett, A.B.,
North Carolina
Teague, Francis Bailey.....Virginia
Thompson, Thomas Payne, A.B.....Maryland
Tollin, Louis .....New Jersey
Totterdale, William Grainger, A.B.,
Maryland
Tumminello, Salvatore Anthony....Maryland
Upton, Hiram Eugene, B.S.....Vermont
Voigt, Herman Albert, Ph.G.....Maryland
Von Schulz, Augustine Paul.....Maryland
Wack, Frederic Van Deursen, B.S.,
New Jersey
Waesche, Frederick Seton, A.B.....Maryland
Whittington, Claude Thomas,
North Carolina
Williams, Palmer Francis C., B.S.,
Maryland
Wilner, Joseph Walter.....New York
*Wohlreich, Joseph Jacob.....New Jersey
Wollak, Theodore.....Maryland
Yarbrough, Oscar D.....Alabama
Zinn, Ralph Howard, B.S.....West Virginia

*Did not complete year.

SECOND-YEAR CLASS, 1925-26.

Aiau, Chadwick Kanekoa.....T. H.
Baer, Adolph.....New York
Bedri, Marcel Rechtman.....Palestine
Berger, William Adolph, B.S.....New Jersey
Bernard, Robert.....New York
Blecherman, Irving Ezra.....New York
Bonelli, Nicholas William.....New Jersey
Brager, Simon.....Maryland
Chor, Herman, A.B.....Maryland
Christian, William.....Pennsylvania
Dailey, Cornelius Michael.....Pennsylvania
Duckwall, Frederick Mooman..West Virginia
Friedman, Bernard.....New York
Gaffney, Charles Bernard.....Connecticut
Gaskins, Theodore Grady.....North Carolina
Gelber, Jacob Saul.....Rhode Island
*Gittleman, Isaac F.....Maryland
Goldberg, Victor, Ph.G.....Maryland
Goodman, Jerome Edward, Ph.G...Maryland
Grollman, Aaron Isaac, B.S.....Maryland
*Guiglia, Sascha Facchetti.....New York
Gulck, George Krohn, B.S.....Denmark
Gundry, Lewis Perkins, A.B.....Maryland
Hankin, Samuel Jacob.....Maryland
Herold, Lewis Jacob, Ph.G.....New York
Johnson, Walter Brenaman, A.B...Maryland
Jones, Henry Alvan, Ph.G.....Maryland
Kaminsky, Philip.....New York
Kaufman, Israel, B.S.....New York
Kohn, Theodore, B.S.....South Carolina
Lampert, Hyman.....New York
Lamstein, Jacob Irving, B.S.....New York
Laukaitis, Joseph George.....Maryland
Lerner, Morris.....New York
Levinsky, Maurice.....Connecticut
Levinson, Louis Jack.....New York
Levy, Walter Howard.....New York
Limbach, Earl Frederick, A.B.....Ohio
Little, Luther Emmanuel, Ph.G.....Maryland
Littman, Irving I.....Maryland
Lyon, Isadore Bernard, A.B.....Maryland
Mace, John, Jr., B.S.....Maryland
Maddi, Vincent Michael, A.B....New York
Maged, Abraham John, A.B.....New York
Matsumura, Junichi.....T. H.
McConey, Robert Sadler, A.B.....Maryland
McFaul, William Neal, Jr., A.B.....Maryland
McGowan, Joseph Francis.....Pennsylvania
McKee, Albert Vincent.....Pennsylvania
Meister, Aaron.....New York
Merksamer, David, A.B.....New York
Merlino, Frank Anthony.....New Jersey
Messina, Vincent Michael.....Maryland
Mostwill, Ralph.....New Jersey
Neuman, Finley Frederick, A.B.....Ohio
Parker, Joseph Wiley.....North Carolina
Pegues, William Leak, A.B., South Carolina
Piacentine, Pasquale Anthony....New York
Pileggi, Peter.....New Jersey
Postrel, Lewis Louis.....New York
Rascoff, Henry.....New York
Rich, Benjamin Sunderland, A.B...Maryland
Roetling, Carl Paul.....Maryland
Rosen, Marks Julius.....New York
Rubinstein, Hyman Solomon, Ph.G., Maryland
Rutter, Joseph Howard.....Florida
Saffron, Morris Harold, A.B.....New Jersey
Sardo, Samuel Philip.....Pennsylvania
Silver, Abraham Alfred.....Connecticut
Singer, Jack Jerome.....Maryland
Smith, Lazarus.....New York
Smoot, Aubrey Cannon, A.B.....Maryland
Smoot, Merrill Clayville, B.S.....Maryland
Stacy, Theodore Edwin, Jr., Ph.G., Pennsylvania
Tannenbaum, Morris, B.S.....New York
Taylor, Charles Vivian, A.B.....Maryland
Tenner, David, Ph.G.....Maryland
Tkach, Nathan Hersh.....New York
Varney, William Henry.....Maryland
Vernaglia, Anthony Paul Joseph..New York
Vogel, S. Zachary.....New York
Volenick, Leo Joseph.....New York
Walter, Frank Pierce.....Maryland
Ward, Hugh Walter, A.B.....Maryland
Warner, Carroll Gardner, A.B.....Maryland
Weintraub, Fred Siegfried, B.S., Pennsylvania
Weiss, Aaron.....New York
Weisenfeld, Nathan, B.S.....Connecticut
Wilkerson, Albert Russell, Ph.G...Maryland
Wolf, Frederick Samuel.....Maryland
Wurzel, Milton.....New Jersey
Zimmerman, Frederick Thomas, A.B., Pennsylvania

*Did not complete year.

FIRST YEAR CLASS, 1925-26.

Abramowitz, Max, B.S.....New York
Ackerman, Jacob Harold.....New York
Agnelli, Junius Bruno.....New York
Albaugh, Guy Clinton.....Pennsylvania
Alessi, Silvio A., Ph. G.....Maryland
Anderson, Walter Anders.....Maryland
*Arnes, Lawrence Gabriel.....Pennsylvania
Bardfeld, Benjamin.....New Jersey
Barland, Samuel, Jr., B.S.....New York
Birely, Morris Franklin, A.B.....Maryland
Bongiorno, Henry Domenic, Ph.G., New Jersey
Botsch, Bernard.....Ohio
Bounds, James Albert.....Maryland
Bowen, James Poore, B.S.....South Carolina
Brauer, Selig Leo.....New Jersey
*Buchness, Joseph Vincent.....Maryland
Buckler, Milburn Alexander, A.B., Maryland
Calas, Andres Eladio.....Cuba
Chambers, Earl LeRoy.....Maryland
Chapman, William Hardee.....Maryland
Ciccone, Arnold William.....Rhode Island
Cohen, Herman.....New Jersey
Cohen, Jacob Harry, A.B.....Maryland
Cohen, Paul, A.B.....Maryland
*Cohen, Samuel.....Pennsylvania
Connell, Raphael Joseph, B.S...Pennsylvania
Coppola, Matthew Joseph, B.S.....New York
Corsello, Joseph Nicholas.....New York
Dailey, William Paul.....Pennsylvania
DeBarbieri, Fred Louis, A.B.....Pennsylvania
Draper, William Bateman.....Maryland
Farbman, Meyer David, B.S.....New York
Fargo, William Russell, A.B.....Maryland
Fatt, Henry Charles, B.S.....New Jersey
Feingold, Charles.....New York
Feit, Emanuel, B.S.....New York
Fifer, Jesse Showalter, A.B.....Delaware
Fiocco, Vincent James, B.S.....New York
*Freed, Israel, Ph.G.....Maryland
Garber, Jacob.....New York
Giocolano, Ralph Gabriel.....New York
Givner, David, A.B.....Maryland
Gouldman, Edwin Foster, B.S.....Virginia
*Greenberg, Abram Morton, Ph.G., Maryland
Haney, John James.....New Jersey
Harris, Joseph William.....Utah
*Hayes, Allen Milliken.....Maine
Heck, Leroy S., B.S.....Maryland
Hess, Warren Albert.....Pennsylvania
Horowitz, Morris, A.B.....Massachusetts
Husted, Samuel Harley.....New Jersey
Jackson, Murray Elliot.....New York
Jacobs, Abraham.....New York
*Jacobs, Orville Edward.....Maryland
*Jacobson, John Joseph.....New Jersey
*Jennings, Robert Henry, A.B., South Carolina
Kelly, Clyde Ernest, A.B.....Pennsylvania
*Kemp, Alexander Brown.....Maryland
Kerrigan, Timothy Robert.....Pennsylvania
Kirschner, Abe Edward, A.B.....New York
Knight, Walter Philip.....Pennsylvania
Leonard, Leo Frank, A.B.....Pennsylvania
Levi, Ernest, Ph.G.....Maryland
*Liner, Samuel Joseph.....North Carolina
*Lowry, James Patrick.....Pennsylvania
Lukesh, Stephen Michael.....Pennsylvania
Lynn, Cy Kellie.....North Carolina
Lynn, Irving, B.S.....New Jersey
Lynn, John Galloway, 3rd.....Maryland
Magovern, Thomas Francis.....New Jersey
McAndrew, Joseph Theodore..West Virginia
McGregor, Alpine Watson.....Utah
Mednick, Benjamin William.....New York
Meranski, Israel, B.S.....Connecticut
Morgan, Isaac J.....Pennsylvania
Moseley, Edgar Tilton, A.B.....Maryland
Murphy, John Edward.....Pennsylvania
Nagle, Carl Rotan.....Maryland
*Nathanson, Nathan.....Pennsylvania
Neidstadt, Isidore Irving, A.B.....Maryland
Newman, Saul Charles, B.S.....Connecticut
Nickman, Emanuel Harrison.....New Jersey
O'Dea, John Francis, A.B.....New York
O'Donohue, Valentine Alphonsus..New York
Osborn, Adam Downey.....New Jersey
Overton, Louis Marvin, A.B...North Carolina
Penchansky, Samuel Joseph.....New Jersey
*Petruzzi, Joseph Anthony.....New York
Porterfield, Maurice Coleman.....Maryland
Powell, Joseph Lawrence.....Pennsylvania
Prager, Benjamin, B.S.....New York
Quinn, Thomas Francis.....Pennsylvania
*Raffel, Leon.....Maryland
*Rapp, Edgar Carl, B.S.....Connecticut
Reeder, Paul Arlington, B.S...West Virginia
Reilly, John Vincent.....New Jersey
Roberts, Eldred.....Maryland
Safer, Jake Victor.....Florida
Safford, Henry Towne, Jr.....Texas
Schreiber, Morris Bernard.....New York
Schwartzbach, Saul, A.B.....New York
Seibel, Jack.....New York
Sedja, Martin Benjamin.....Pennsylvania
Sekerak, Raymond Andrew.....Connecticut
Serra, Lawrence Marco, Ph.G.....Maryland
Sikorsky, Albert Edward, A.B.....Maryland
Silver, Mabel Irene, B.S.....Maryland
Snyder, Nathan, Ph.G.....Maryland

FIRST YEAR CLASS, 1925-26—(Continued)

Soifer, Albert Alexander.....Maryland
Solomon, Milton, B.S.....New York
Speicher, Wilbur Glenn.....Maryland
Spencer, Ernest.....Maryland
Spurrier, Oliver Walter, A.B.....Maryland
Staton, Leon Raphael, A.B...North Carolina
Stevenson, Charles Calvert.....Utah
Stone, Jesse Edwin, A.B.....Maryland
Sullivan, William Joseph.....Rhode Island
Ullrich, Henry Franz.....Maryland
Vann, Homer King.....Florida
Wallack, Charles Albert, B.S.....New Jersey
*Werner, Aaron Seth.....New York
Yudkoff, William.....New Jersey

*Did not complete year.

GENERAL SUMMARY OF STUDENTS ATTENDING THE UNIVERSITY OF MARYLAND

SESSION OF 1925-1926.

College of Agriculture		208
	Regular	129
	Short Courses	79
College of Arts and Sciences		472
	Regular	456
	Extension	16
School of Business Administration		341
	Regular	152
	Extension	189
School of Dentistry		488
College of Education		231
	Regular	118
	Extension	113
College of Engineering		405
	Regular	212
	Extension	193
Graduate School		113
College of Home Economics		34
School of Law		596
School of Medicine		372
School of Nursing		76
School of Pharmacy		234
Summer School, 1925, College Park		454
Summer School, 1925, School of Business Administration		36
Total		4,060
Duplications		101
Net Total		3,959

GRADUATES OF UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, JUNE 5, 1926.

Anker, Harry.....Ohio
Askin, John A., A.B.....Maryland
Ballard, Margaret Byrnside....West Virginia
Beachley, Jack Henson.....Maryland
Blough, Homer Chester, B.S...Pennsylvania
Bronstein, Irving.....New York
Calvin, Warren Elwood, B.S.....Maryland
D'Angelo, Antonio Francesco....Rhode Island
DeVincentis, Henry.....New Jersey
Diamond, H. Elias, B.S.....New York
DiPaula, Frank Rosario, A.B.....Maryland
Dyer, Newman Houghton, B.S., West Virginia
Eanet, Paul.....Maryland
Edmonds, Charles William.....Maryland
Elliott, Julian Carr, A.B.....Virginia
England, Welch, B.S.....West Virginia
Freedman, Herman.....New Jersey
Freedman, Max.....New Jersey
Freuder, Arthur Nathan.....New York
Geraghty, Francis Joseph, A.B.....Maryland
Gerber, Isadore Earle, A.B.....Maryland
Gordon, Abel, A.B.....New Jersey
Gorham, Herbert Jenkins....North Carolina
Graham, John Wirt, A.B.....Maryland
Helfond, David Mathew, B.S.....New York
Hendrix, Nevins Byford, A.M.....Maryland
Hibbitts, John Thomas.....Maryland
Hyman, Calvin, A.B.....Maryland
Jensen, Jacob Roed, B.S.....Denmark
Johnson, Philip, B.S.....West Virginia
Jolson, Meyer Stanley, A.B.....Maryland
Knapp, Alphonse Joseph, A.B.....Maryland
Krosnoff, John Alexander, B.S., Pennsylvania
Lavy, Louis Theodore.....Maryland
Leake, Everette Majjette....North Carolina
Levin, H. Edmund, B.S.....Maryland
Levin, Isadore Leonard, A.B.....Ohio
Levin, Joseph.....New Jersey
Loftin, William Frank English, A.B., North Carolina
Lumpkin, Lloyd Uber, B.S.....Maryland
Lusby, Frank Farrier, A.B.....Maryland
Manginelli, Emanuel Alfred.....New York
Merkel, Walter Clarence, A.B., Pennsylvania
Miller, Harry G.....New York
Moriconi, Albert Francis.....New Jersey
Polsue, William Clewell.....West Virginia
Rattenni, Arthur.....Rhode Island
Rosenberg, Albert Abraham....Pennsylvania
Rosenfeld, Max Harry, A.B.....Maryland
Rothberg, Abraham S., B.S.....New York
Sashin, David.....New York
Sax, Benjamin J.....New York
Schenker, Paul.....Maryland
Schmukler, Jacob.....New Jersey
Schneider, David, A.B.....Maryland
Schuman, William, A.B.....Maryland
Schwartz, Ralph Alfred.....New Jersey
Scullion, Arthur Anthony, B.S...New Jersey
Sherman, Elizabeth Bowman, A.B., Virginia
Spano, Frank.....New Jersey
Tayntor, Lewis Olds, Ph.C.....Pennsylvania
Teagarden, Ersie Van, B.S.....West Virginia
Teitelbaum, Maurice L.....New York
Tobias, Herbert Ramsay.....Maryland
Trubek, Max, A.B.....New Jersey
Weinstein, Samuel.....New Jersey
Weiss, Louis Leo.....New York
Weseley, Louis Jerome.....New York
Whicker, Guy Lorraine, A.B., North Carolina
Wolfe, Samuel Benjamin.....Maryland

Prizemen.

University Prize—Gold Medal—ELIZABETH BOWMAN SHERMAN, A.B.

Certificates of Honor.

SAMUEL B. WOLFE
FRANK FARRIER LUSBY, A.B.
IRVING BRONSTEIN
CALVIN HYMAN, A.B.
JOHN A. ASKIN, A.B.

In the third year, the Dr. Jose L. Hirsh Memorial Prize of $50.00 was awarded to Charles E. Gill for the best work in Pathology during the second and third years.

ALUMNI ASSOCIATION SCHOOL OF MEDICINE

President

C. W. Maxson, M.D.

First Vice-President

J. Mason Hundley, Sr., M.D.

Second Vice-President

Frank Hines, M.D.

Third Vice-President

A. W. Gracie, M.D.

Secretary

Howard M. Bubert, M.D.

Assistant Secretary

Nathan Winslow, M.D.

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G. M. Linthicum, M.D.
E. H. Hayward, M.D.

Alumni Council

Charles Bagley, Jr., M.D.

Necrologist

W. J. Todd, M.D.

Executive Committee

Robert L. Mitchell, M.D.

W. S. Love, M.D.
Edgar Friedenwald, M.D.
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I give, devise and bequeath to the Regents of the University of Maryland, a corporation incorporated under the laws of the State of Maryland, for the benefit of the Faculty of Physic.....
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THE UNIVERSITY OF MARYLAND SCHOOL OF NURSING.

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HELEN MORGART, R.N. ..... Head Nurse, Men's Medical Ward
ELIZABETH CANNON, R.N. ..... Head Nurse, Men's Surgical Ward
IDA NAGEL, R.N. ..... Assistant in Operating Room
VIOLA MAY CADY, R.N. ..... Head Nurse, Children's Ward
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STUDENTS ENROLLED, 1925-1926

Seniors	19
Intermediates	17
Juniors and Preparatory	35
Total	71

GENERAL STATEMENT.

The University of Maryland School for Nurses was established in the year 1889.

Since that time it has been an integral part of the University Hospital, coming under the same government.

The school is non-sectarian, the only religious services being morning prayers.

The University Hospital is a general hospital containing about 250 beds. It is equipped to give young women a thorough course of instruction and practice in all phases of nursing including experience in the operating room.

The school offers the student nurse unusual advantages in its opportunity for varied experience and in its thorough curriculum taught by best qualified instructors and members of the Medical Staff of the University.

Admission—Requirements: In order to become a candidate for admission to the Training School, application must be made in person or by letter, to the Superintendent of Nurses. An application by letter should be accompanied by a statement from a clergyman testifying to good moral character and from a physician certifying to sound health and unimpaired faculties. No person will be considered who is not in a good physical condition between the ages of 18 and 35. She must also show that she has a High School education or its equivalent. This is the minimum requirement, as women of superior education and culture are given preference provided they meet the requirements in other particulars.

The fitness of the applicant for the work and the propriety of dismissing or retaining her at the end of her term of probation, is left to the decision of the Superintendent of Nurses. Misconduct, disobedience, insubordination, inefficiency, or neglect of duty are causes for dismissal at any time by the Superintendent of Nurses, with the approval of the President of the University.

Time: Students are admitted in February, June and September.

HOURS ON DUTY: During the probation term the students are on duty not more than six hours daily. During the Junior, Intermediate and Senior years, the students are on eight hour day duty, with six hours on Sunday and Holidays, and ten hour night duty. The night duty periods are approximately two months each, with one day at the termination of each term for rest and recreation. The period of night duty is approximately five or six months during the three years.

SICKNESS: A physician is in attendance each day, and when ill all students are cared for gratuitously. The time lost through illness in excess of two weeks, during the three years must be made up. Should the authorities of the school decide that through the time lost the theoretical work as not been sufficiently covered to permit the student to continue in that year, it will be necessary for her to continue her work with the next class.

VACATIONS: Vacations are given between June and September. A period of three weeks is allowed the student at the completion of the first year and four weeks at the completion of the second year.

EXPENSE: A student receives her board, lodging and a reasonable amount of laundry from the date of entrance. During her period of probation she provides her own uniforms made in accordance with the hospital regulations. After being accepted as a student nurse she wears the uniform furnished by the hospital. The student is also provided with textbooks and in addition to this is paid five dollars ($5.00) a month. Her personal expenses during the course of instruction and training will depend entirely upon her individual habits and tastes.

GENERAL PLAN OF INSTRUCTION.

The course of instruction covers a period of three years.

JUNIOR YEAR.

First Term.

The Junior Year is divided into two periods. The first term is the preparatory period (4 months) and the second the junior term.

In the preparatory term the student is given practical instruction in:

I. The making of hospital and surgical supplies. The cost of hospital materials, apparatus and surgical instruments.

II. Household economics and the preparation of foods.

III. The hospital out-patients department and dispensary.

During this term the practical work is done under constant supervision, and teaching is given correlatively.

Excursions are made to markets, hygienic dairies, linen rooms, laundry and store room.

The maximum number of hours per week in formal instructions divided into laboratory and lecture periods is thirty hours and includes courses in Anatomy and Physiology, Dietetics, Materia Medica, Personal Hygiene, Drugs and Solutions, Household Economics, Short course in Ethics and History of Nursing.

At the close of the first half of Junior Year the students are required to pass satisfactorily both the written and oral tests, and failure to do so will be sufficient reason to terminate the course at this point.

SUBSEQUENT COURSE.

The course of instruction, in addition to the probationary period, occupies two and three-fourths years, and students are not accepted for a shorter period.

After entering the wards, the students are constantly engaged in practical work under the immediate supervision and direction of the head nurses and instructors.

JUNIOR YEAR.

Second Term.

During this period the students receive theoretical instruction in Massage, Bacteriology, General Surgery and Introductory Medicine. Practical instruction is received in the male and female, medical, surgical and children's wards.

INTERMEDIATE YEAR.

During this period the theoretical instruction includes Pediatrics, General Medicine, Infectious Diseases, Obstetrics, Gynecology and Orthopaedics. The practical work provides experience in the nursing of obstetrical and gynecological patients, in the operating rooms and the out-patient department.

SENIOR YEAR.

During this period the student receives short courses of lectures on subjects of special interest. This includes a consideration of the work of institutions of public and private charities, of settlements, and various branches of professional work in nursing.

Experience is given in executive and administration work to those showing exceptional ability in the Senior Year. With these students conferences are held on administration and teaching problems.

EXAMINATIONS: At the end of the first half year, students are examined in Anatomy, Physiology, Materia Medica, Dietetics and Hygiene. At the end of the first year in Surgery and Bacteriology.

During the second year they are examined in Urinalysis, Massage, Gynecology, General Medicine, Infectious Diseases, Obstetrics and Pediatrics. At the end of the third year the final examination in Nervous and Mental Diseases, Diseases of Special Senses, Venereal Diseases, Ethics and History of Nursing.

Examinations—which are both written and oral—include practical tests, and the standing of the student is based upon the general character of work throughout the year, as well as the results of the examinations. Students must pass all subjects before entering upon the work of the following year.

GRADUATION: The diploma of the School will be awarded to those who have completed satisfactorily the full term of three years and have passed successfully the final examinations.

SCHOLARSHIPS: One scholarship has been established by the Alumnae of the Training School. It entitles a nurse to six weeks course at Teachers College, New York. This scholarship is awarded at the close of the third year to the student whose work has been of the highest excellence, and who desires to pursue post-graduate study and special work.

An Alumnae Pin is presented by the Women's Auxiliary Board to the student who at the completion of three years shows exceptional executive ability.

GRADUATES, 1926.

Allen, Naomi	Delaware	Hersbey, Esther	Pennsylvania
Bond, Mildred	Maryland	Hurlock, Edna	Maryland
Coates, Marian	Maryland	Mundy, Fannie	South Carolina
Caples, Virginia	Maryland	Parks, Colgate	Maryland
Colbourne, Elizabeth	Maryland	Powell, Marion	Maryland
Diehl, Sara	Pennsylvania	Sperber, Elsie	Maryland
Eller, Maybelle	Maryland	Sperber, Theodora	Maryland
Ewell, Elizabeth	Maryland	Shoultz, Carol	Indiana
Fink, Margaret	Maryland	Scott, Elizabeth	Maryland
Glover, Rebekah	Maryland		

FIVE YEAR PROGRAM.

In addition to the regular three-year course of training the University offers a combined Academic and Nursing program leading to the degree of Bachelor of Science and a Diploma in Nursing.

The first two years of the course (or pre-hospital period), consisting of 70 semester hours, are spent in the College of Arts and Sciences of the University, during which period the student has an introduction to the general cultural subjects which are considered fundamental in any college training. At least the latter of these two years must be spent in residence at College Park in order that the student may have her share in the social and cultural activities of college life. The last three years are spent in the School of Nursing in Baltimore. In the fifth year of the combined program certain elective courses such as Public Health Nursing, Nursing Education, Practical Sociology and Educational Psychology are arranged.

TWO-YEAR PROGRAM IN THE COLLEGE OF ARTS AND SCIENCES.

Freshmen Year.

	Semester I	Semester II
English Composition and Rhetoric (Eng. 101)	3	3
Foreign Language	4-3	4-3
General Chemistry (Chem. 101)	4	4
Elements of Social Science (Soc. Sci. 101)	3	3
Elementary Foods (H. E. 101)	3	3
Physical Education	1	1
	18	18

Sophomore Year.

English Literature or History	3	3
Organic and Food Chemistry	3	
Nutrition		3
General Economics (Econ. 105)	3	
Elements of Psychology (Psych. 101)		3
Gen. Zoology (Zool. 101)	4	
Public Speaking (P. S. 101-102)	1	1
Physical Education (Phys. Ed. 102)	2	2
Electives	1	5
	17	17

MERCY HOSPITAL SCHOOL OF NURSING.

The Mercy Hospital School of Nursing was organized and incorporated under the laws of the State of Maryland in 1899 and has operated successfully for a quarter of a century.

The course of study is three years, during which time the Superintendent of the School assigns each pupil for definite periods to the various wards and services. Such practical training under skilled supervisors best applies the *science* and most adequately teaches the *art* of nursing. The course of study is modified and revised year by year, always with the idea of improvement. In schools of nursing, as in all other professional schools, changes are necessary, for to stand still is to retrograde. Each year new subjects are introduced or old ones are taught in new and more attractive ways. The curriculum embraces a preliminary period of four months, a junior term of eight months, an intermediate term of twelve months and a serior term of twelve months.

Mercy Hospital being attached to the Medical School of the University of Maryland, its nurses enjoy the exceptional advantage of systematic courses of lectures covering every department of nursing. These lectures, given by professors who are masters of their subjects, are made to co-ordinate with the school curriculum, thus giving the student nurse a thorough knowledge of her profession.

REQUIREMENTS FOR ADMISSION.

Applications for admission to the School of Nursing should be addressed to Superintendent of Nurses, Mercy Hospital, Baltimore, Md.

Requirements: Highest moral standard, intelligence, health, high-school education. Social references and letters from pastors and physicians are also required.

The course comprises three years of theory and practice. After four months' probation, candidates, if they possess the necessary qualifications, are admitted to the School proper, receiving Ten Dollars per month; their education being considered their compensation. Board, laundry, etc., furnished by the institution.

Four weeks before admission, candidates should forward $35.00 and measurements for uniforms and aprons, which will be in readiness on their arrival. No orders will be considered until this amount is received. These uniforms are worn throughout entire course, thus obviating additional expense after the probationary term expires. All clothing should be distinctly marked with names, Style No. 28, which may be procured from Woven Name Tape Co., Winstead, Conn. On admission, $10.00 is deposited on account of books.

Hours of duty: 7 A. M. to 7 P. M., with three hours off and one hour for meals, making an eight-hour system, one afternoon every week, and two weeks' vacation annually.

If nurses desire to remain out after 9:30 P. M. permission must be secured from the Superintendent. Late permission until 11:30 P. M. may be obtained once every two weeks, from June to September, and once a month from September to June. No visitors allowed except when off duty.

The right is reserved to dismiss pupils for any cause that may be deemed sufficient by the Superintendent of Nurses.

Dentistry should be attended to prior to entrance. Candidates should come provided with watch with second hand, fountain pen, scissors and comfortable shoes with rubber heels not too high; plain underwear, soap, towels, three laundry bags, shoe case and napkin ring.

Address baggage to Nurses' Home, Mercy Hospital, Pleasant and Calvert Streets, Baltimore, Md.

GRADUATES OF 1926.

ELIZABETH STOKES
LOIS MAY
ROBERTA ELLIOT
EDITH SCHLICKER
MARY MARKER
MERLE STRONG
MARIE MILLER
MATILDA WHITE
MARY CALLAHAN
HELEN SLAYBAUGH
KATHERINE BRADY
CATHERINE RENEHAN
MILDRED GARDINER
MIRIAM REITER
ELEANOR BEHR
ELIZABETH KLENOTIZ
LORETTA KILMER
KATHRYN AUSTIN
ANNE A. ROGERS
MARION KITTLE
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MARY SNEERINGER
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BULLETIN

OF THE

SCHOOL OF MEDICINE

UNIVERSITY OF MARYLAND

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PROGNOSIS AND TREATMENT OF PERICARDITIS*

By MAURICE C. PINCOFFS,
From the Department of Medicine, University of Maryland.

Methods of diagnosis and technique of operative procedures have so largely occupied the attention of those writing on the subject of pericarditis that it seemed timely to attempt to formulate some of the indications for different types of treatment and to sum up our scant information as to the details of prognosis.

Aside from the palliative and supportive measures, such as the back rest, the ice cap on the precordium, sedatives, diet, etc., with which we are all acquainted, the serious problem of treatment in pericarditis resolves itself to the indications for

1. paracentesis of the pericardium
2. pericardiotomy
3. artificial pneumopericardium
4. cardiolysis and similar operations.

A brief statement as to the general indications for the use of each of these therapeutic measures; some points as to the technique of execution, and as to the dangers attending their employment, will be followed by a discussion of the special indications in the common clinical types of pericarditis.

* Read before the Interstate Post-Graduate Clinic Assemblies, St. Paul, Minn., October 14, 1925.

I. **Paracentesis** of the pericardium finds its use

1. in relieving excessive pressure in the pericardium in non-purulent pericardial effusion.
2. in relieving pressure in purulent pericarditis, but here only as an emergency method,
3. as a diagnostic method to distinguish between purulent, non-purulent and tuberculous forms of effusion.

Many methods of performing pericardial paracentesis have been described which may be summarized and criticized as follows:

1. Paracentesis close to the sternum, through the intercostal spaces on the right or on the left.

   Puncture to the right of the sternum is too close to the thin walled right auricle for safety, and has no compensating advantage.

   Puncture to the left of the sternum, in the lowest feasible interspace, directing the needle laterally and a little down so as to parallel the ventricles after entering the pericardium, has the advantage of missing the pleura and of running a minimal risk of injuring the heart. It is criticized as leading to injury of the internal mammary artery, but this appears fanciful and there is no such instance on record. It does not, however, always reach the fluid since this is often collected more posteriorly and laterally.

2. Paracentesis near the left nipple, lateral to the apex impulse, but mesial to the left border of the effusion. This method is excellent, perhaps the best, where one is sure the effusion is non-purulent; otherwise the danger of infecting the pleura would contraindicate it. An instance of an empyema following this method is recorded by Curschmann.

3. Paracentesis in the left costo-xyphoid angle. This is more difficult and less safe than

4. Paracentesis at the tip of the xyphoid, following its posterior surface as a guide upward and slightly posteriorly. This is a good method especially for purulent cases and will usually find fluid if present. There seems to be no danger of infecting the peritoneum if the point is kept close to the xyphoid. It has the disadvantage of approaching the heart at right angles so that scratching of its surface or puncture of its wall is more likely. A case of death from hemopericardium after its use is reported by Blechmann.

On the whole the left sternal border and the xyphoid process seem preferable sites for purulent cases; and the puncture near the apex for non-purulent cases.

The danger from paracentesis is real, but not as great as might be imagined. There are numerous instances on record in which the heart has been punctured without any apparent harm. I have personally seen the ventricle punctured, and blood issue in spurts through the needle, without any apparent after effects. Raymond reports that cardiac puncture occurred four times in forty-six cases of paracentesis. On the other hand deaths from paracentesis of the pericardium have frequently been described as, for instance, by Callender, Blechmann, West, etc.

In performing paracentesis the skin and deeper tissues should be infiltrated with novocaine. The skin is incised with a small scalpel. An ordinary lumbar puncture needle should then be passed, guarding with the finger so as to prevent sudden movement inward of the tip when passing tougher fascias. An adapter to fit in the end of the needle after removal of the stylet must be available, so that connection may be made, through a short rubber tube, to an aspirating syringe or bottle. The rubber connecting tube allows the needle to wobble freely with the movements of the heart. General anaesthesia is not necessary. A full dose of morphine is very helpful. A screen should keep the operative field from the patient's view. Needless to say the requirement for faultless asepsis is imperative. If fluid is not obtained at one point, puncture at the other indicated sites should be carried out.

II. Pericardiotomy is indicated in cases of pericarditis due to the pyogenic organisms. Various methods of approach to the pericardium have been advocated.

1. By trephining the sternum (Riolan) just above its junction with the xyphoid.
2. Through left chest wall,
   a. resecting the fifth cartilage (Gussenbauer & Ollier)
   b. resecting the sixth cartilage (Kocher, Axhausen and Pels-Leusden)
   c. resecting the fifth and sixth cartilages (Delorme & Mignon).
3. From beneath the left costal arch (Larrey, Rehn, Allingham).

The requisites of a satisfactory operation are:

1. That there should be adequate drainage from a low point of the pericardial sac.
2. That the opening should enable the operator to explore the recesses of the sac.
3. That there should be a minimal danger of infecting the pleural cavities.

The simplest operation is that of trephining the sternum; and in some cases it has given satisfactory results; but for the most part it has been abandoned because the small, rigid opening does not allow of adequate exploration, nor perhaps of thorough drainage. The operation which combines the most advantages appears to be that of Larrey, Rehn, Allingham, in which the incision is at the left seventh costal cartilage, which is resected in part to allow of an approach upward to the base of the diaphragm. The pleura is avoided, drainage is from a low point and the exposure is adequate for exploration.

All of these operations may be performed under local anaesthesia and the operative mortality in the hands of an experienced surgeon will be practically nil.

III. Artificial pneumopericardium will be discussed in connection with tuberculous pericarditis in which it finds its only indication.

IV. The various operations to free the heart in adhesive pericarditis will be discussed later on in connection with the indications in different forms of that disease.

From the point of view of treatment, acute pericarditis is best dealt with according to etiology and the same holds true as to prognosis in this condition.

There are then the following etiological divisions to be born in mind. They are arranged in what I feel is their order of frequency:

1. Rheumatic pericarditis
2. Pericarditis due to pyogenic organisms
3. The pericarditis of chronic nephritis
4. Idiopathic pericarditis
5. Tuberculous pericarditis

Rheumatic Pericarditis.

The prognosis in fibrinous rheumatic pericarditis is good as far as temporary recovery is concerned unless there is evidence of a high grade of myocardial injury. The prognosis depends upon the heart muscle lesion, not upon the pericardial lesion.

In rheumatic pericarditis with effusion, there is always some danger of death from pressure on the heart. This danger is slight, but must be reckoned with. The ultimate outlook for a case of rheumatic pericarditis is somewhat darkened by the possibility that a progressive adhesive pericarditis may develop. There is great need of statistical studies to determine in how large a percentage of cases this occurs.

The treatment of the acute stages of rheumatic pericarditis is usually entirely palliative. Rarely are any of the more radical procedures needed. Even where effusion makes itself plainly manifest, it rarely becomes sufficiently large to make tapping necessary. I do not believe that tapping hastens the process of recovery. The signs of fluid usually disappear of themselves in ten days to two weeks.

The pericardium should be tapped in these cases only for dangerous pressure signs. I feel that the following indications for tapping may be safely followed:

1. Increasing and marked dyspnoea and orthopnoea which is manifestly exhausting the patient.
2. Increasing pulse rate with decrease in the size of the pulse and falling blood pressure.
3. The appearance of pulsus paradoxus, i. e., the waning of the pulse during inspiration.

If such signs are definitely increasing, tapping should not be delayed. Where death occurs from mechanical pressure, it usually comes suddenly. Since the effusion in these cases is never purulent, there is no contraindication to traversing the pleura, and paracentesis may be done just inside the left border of dulness outside and below the nipple. If the fluid is not obtained at one point, paracentesis should be done at other points of election. There is no contraindication to removing as much fluid as can be obtained, but it is advisable to draw it off slowly. The removal of even fifty to one hundred c.c. will often give marked relief. If pleural effusion is coincidently present, it should be tapped first. Its removal will aid in exactly outlining the pericardial dulness.

Pericarditis due to pyogenic organisms.

Pneumococcic pericarditis.

Pericarditis in association with lobar pneumonia is a very interesting condition from the point of view of treatment. Since the only adequate treatment available involves an operation on a desperately ill patient, it is of interest to attempt to estimate just what chances the patient stands of recovering if left alone. The statistical data are very scant. By consolidation of the statistics of Chatard, Hess, Sello, Townsend and Coolidge, Hay & Lewis, and Larrabee, 99 cases of pneumococcic pericarditis are obtained, of which 70 died and 29 recovered. From the reports of the authors, it seems safe to assume that none of these cases was operated upon, so that the mortality of pneumococcic pericarditis untreated may be taken to be about 70 per cent.

There are two clinical forms of the disease: dry fibrinous pericarditis, and pericarditis with effusion. The latter is certainly the more fatal form, in it therefore the mortality would be well above 70 per cent if untreated. Camac and Poole have collected the cases up to 1917 in which pericardiotomy was done for suppurative pericarditis following pneumonia. After omitting one or two probably influenzal cases, there are 19 cases operated on, with a mortality of 47.3 per cent. Over 70 per cent of deaths occurred without operation; and 47.3 per cent in those operated upon. It is unsafe to generalize from such small figures, but until we have more basis of exact information, it will be safest to consider that there exists an urgent indication for the surgical drainage of every case of pericarditis with effusion in pneumonia. Preliminary paracentesis is usually uncalled for, except as an emergency measure to relieve urgent pressure symptoms.

If the indications for operation are relatively clear in the case with effusion, this is not so true when we have to deal with a patient showing merely a dry fibrinous rub over the precordium in association with a lobar pneumonia. A considerable number of these cases will, no doubt, get well if let alone. The question is whether to furnish early drainage to a lesion which is potentially purulent.

If such a case of acute fibrinous pericarditis is discovered during the height of a pneumonia, it seems reasonable to decide against immediate intervention. The infection in the lungs is still the dominant factor, and it is not likely that any immediate relief could be obtained by peri-

cardial drainage which would compensate for the danger to the patient from operative shock, and the hindrance to respiration due to an incision at the costal margin, and the binding of the dressings.

Frequently, however, the pericarditis occurs during the subsidence of the pulmonary infection. To such a case one may fairly, I believe, apply the following method of reasoning. In the absence of other complications, the patient's general condition (fever, pulse, etc.) may be considered due to the relative virulence or benignity of the pericardial infection. If the patient does not show evidence of marked toxemia, nor of myocardial damage, a reasonable number of days may be devoted to expectant treatment. If, however, from the onset, the patient's condition is alarming, the fever high, the pulse unduly rapid, there is, I believe, more to be hoped for from operation than from waiting. At operation, either the presumptive diagnosis will be sustained by the finding of a shaggy heart with little or no free exudate or, and this would be more fortunate, a considerable amount of seropurulent fluid either free or encapsulated may be evacuated. One can never be sure from the mere presence of a friction rub and the absence of the signs of pericardial effusion, that there is not present such an accumulation of pus, whose removal might be life saving. This is especially true in cases of pneumococcic pericarditis in which early glutinous adhesions anteriorly tend to restrict the free pus to the posterior portion of the pericardium. It is for this reason that I strongly advocate an exploratory pericardiotomy in any case of acute fibrinous pericarditis after pneumonia where the clinical condition of the patient does not justify the hope of a prompt spontaneous cure.

Whether any benefit is to be expected from the operation where only a dry fibrinous or fibrinopurulent shaggy heart is found, I do not feel able to say: the two instances in my experience in which this occurred died, though not, I should say, because of the operation. In a case of Dr. Gordon Wilson's, however, reported recently to the Baltimore City Medical Society, improvement followed the operation, and ultimately recovery occurred.

Streptococcic pericarditis.

Streptococcic pericarditis is usually seen as only one manifestation of a fatal septicaemia. The cases observed in puerperal sepsis are good illustrations of this. In influenzal types of pneumonia, streptococcic pericarditis, usually

associated with empyema, is extraordinarily frequent. It occurred in 18 per cent of 300 fatal pneumonia cases at Fort Riley (Stone). The type of streptococcic pericarditis, which occurs as a complication of erysipelas, is apt to be less fatal. There is one case in our records with recovery. It is only in the cases with effusion, and which are not evidently terminal, that operation offers much chance of relief in streptococcic pericarditis.

Staphylococcic pericarditis.

Staphylococcic pericarditis, while also frequently associated with a bacteriemia, has a somewhat better prognosis than the streptococcic form. It may show itself merely as a temporary fibrinous rub. It may lead rapidly to effusion, or go on to cause an adherent pericardium. It is most commonly seen in association with osteomyelitis. Brooks reports upon the results of treatment in this form. Of thirty-six cases with effusion operated upon, only two were operated upon very early before the fluid had become frankly purulent. These were the only two which recovered. He advises operation at the first sign of fluid.

Meningococcic pericarditis.

Meningococcic pericarditis, though a rarity, is worthy of mention here, because Herrick a few years ago reported marked benefit from the injection of antimeningococcus serum into the pericardium in one case of menigococcic pericarditis with effusion. It is a manifestation of a severe septicaemic form of the disease. Ten of Herrick's twelve cases died. It seems doubtful if there is any role for surgery here.

Gonococcic pericarditis.

Gonococcic pericarditis is a rarity. It is usually fibrinous and does not call for special treatment. The outlook is apparently good unless there is evidence of an associated endocarditis.

Idiopathic Acute Pericarditis.

In most of the above types, the etiological basis of the pericarditis is reasonably clear from the symptoms and signs of the attendant disease, rheumatic fever, lobar pneumonia, puerperal sepsis, osteomyelitis, etc. There are, however, cases in which the pericarditis is the outstanding feature of the case and it is not possible to be sure as to the nature of the infecting organism.

A boy of 4 years was brought into the University Hos-

pital with the history of a febrile illness of one month's duration. The onset had been with tonsilitis, followed by otitis media. The larger joints had been quite painful, but not definitely swollen. He had later developed cough, and marked dyspnoea. The physical examination revealed evidence of a large pericardial effusion.

There were many features of this case which suggested a rheumatic origin for the effusion. In the doubt, a paracentesis was performed. The fluid was sero-purulent and from it a pure culture of pneumococci was grown. Dr. Shipley did a pericardiotomy and the child recovered.

Where there is doubt as to the nature of a pericardial effusion, it is best to do a diagnostic paracentesis.

The Pericarditis of Chronic Nephritis.

As has been known since the days of Bright, acute pericarditis frequently complicates the severe forms of chronic nephritis. Its occurrence is estimated at from 8 to 11 per cent of fatal cases of nephritis. Barach found pericarditis in 3.2 per cent of 929 fatal and non-fatal cases of nephritis. It is one of the common forms of acute pericarditis; perhaps the most common after the age of thirty-five years.

Clinically, it is usually an acute fibrinous pericarditis, rarely is there evidence of any considerable effusion. The constitutional symptoms are notably mild. Bacteriologically the exudate is usually sterile. Barach has shown that marked nitrogen retention, acidosis, high blood pressure, anaemia, and a hemorrhagic tendency characterize these cases and he believes, as do many others, that a chemical irritant is the cause of the lesion. From the point of view of treatment, no special indications are present. Rarely a large effusion might cause pressure symptoms, which should then be relieved by paracentesis; preferably, since some cases are not sterile, a paracentesis which avoids the pleura. This form of pericarditis is of great significance prognostically. It is not so much a complication which terminates life as an evidence of a terminal stage in the underlying nephritis. Few patients survive it by more than a few months; and in most it is seen only in the last week or so of life.

Tuberculous Pericarditis.

The involvement of the pericardium in a generalized miliary tuberculosis, while frequently observed in the autopsy room, presents little of clinical interest from the

point of view of prognosis or treatment. There occur, however, cases in which the tuberculosis of the pericardium dominates the clinical picture; either rarely as the sole evidence of tuberculosis, or, more usually, in concomitance with evidence of tuberculosis, active or inactive, elsewhere, as in the lungs, mediastinal glands, or serous membranes. In this category of cases, there are two types to be observed—one with effusion usually large in amount, serous, sero-hemorrhagic, sometimes purulent, and a second type with a greatly thickened fibrocaseous adherent pericardium. The first type may go over into the second when life is preserved sufficiently long.

The prognosis in either form of tuberculous pericarditis is grave. Bernard and Pehn in 1907 reported nine cases with only one apparent cure.

This, however, was in the days when treatment was confined to repeated paracentesis to relieve the pressure symptoms from the rapidly recurring effusion. Wenkebach in 1910 first reported upon the beneficial results of replacing some of the fluid drawn off by sterile air. He felt that not only did the air promote healing, but that pericardial adhesions as a sequel were rendered less likely of occurrence. In the relatively few cases in which the method has since been reported there is evidence enough that there is little or no danger in its use, and that the results are sufficiently encouraging to indicate its trial. A measured amount of air or nitrogen, usually one-half of the amount of exudate withdrawn, is forced in through the paracentesis needle from a sterile flask. The air is displaced from the flask by allowing a measured amount of liquid to flow in.

I have desired for sometime to have the opportunity of treating one of these cases with either the quartz lamp or the X-ray; methods which in recent years have been shown to be of great value in the treatment of tuberculosis of the peritoneum. I know of no reports of their use in pericarditis, but certainly believe a trial should be made of their effect.

Chronic Adhesive Pericarditis

Pericarditic adhesions are apt to be the sequel of any of the preceding forms of pericarditis in which spontaneous recovery from the acute stage has occurred. As is well shown in Smith's post-mortem statistics, many of these cases develop no marked circulatory symptoms and die at some later time of quite other causes. In still other cases, the pericardial adhesions manifestly have embarrassed the heart, but the final circulatory failure is as much due to

valvular defects, chronic or acute, or to associated pathology in other organs as to the adhesions. Deducting these, there remain a group of cases in which the intrapericardial, and mediastinal, inflammatory, fibrotic changes dominate the clinical picture producing striking symptoms of a progressive and ultimately fatal nature. Since the cause of these symptoms lies for the most part in mechanical hindrances to cardiac and respiratory function, and since in some parts of the world surgeons have been attacking these mechanical defects with, on the whole, an astonishing degree of success, it is of some interest to review briefly our conception of the disease.

In most cases, the adhesive fibrosis affects not only the visceral and parietal pericardium but the mediastinum as well. In a complete case, the heart is not only adherent to the pericardial sac, but the latter is anchored to the anterior chest wall and to the spine; and the mediastinal tissues as a whole have lost much of their elasticity. Respiration is hindered because the diaphragm is anchored and the lower sternum is tied down; and the ventricles are embarrassed in their systole because they must carry with them the adherent chest wall. This is the picture of adhesive pericardiomediastinitis with which we have been made familiar by the writings of Kussmaul, Broadbent, Roberts, Wenkebach and others. It is here that we see the chest wall moving with the heart: the systolic retraction and diastolic rebound at the apex: the drawing in of the intercostal spaces in the left back: the fixed lower sternum: the upper chest breathing: the big heart: the lack of lateral cardiac movement, and the limited diaphragmatic movement before the fluoroscope. With these signs are found evidences of a greater or lesser circulatory failure, dyspnoea, congestion, edema, etc.

Friedel Pick in earlier days and Vollhard and others more recently have drawn attention, however, to quite another clinical picture. In this second type, which may be, in some cases, a later stage of the picture just described, there has been retraction of the fibrous tissue and the heart and vessels are tightly enclosed in the adherent and thickened pericardium. This contraction affects with especial force the more yielding auricles and great veins. It is no longer the systole of the ventricles which is chiefly hindered. It is the diastole of the auricles. The auricles are less able to expand to receive their quota of blood. The clinical picture as a consequence is preeminently that of venous stasis. On the pulmonary side, we have the picture

of acute edemas and of recurrent hydrothorax. On the systemic side, the congested cyanotic face—the swollen neck veins—the enlarged hard liver of cardiac cirrhosis—the obstinate recurrent ascites. The heart often is found not enlarged in these cases. The sounds are distant and faint. It is characteristic that, before the fluoroscope, the contractions of the heart are scarcely perceptible.

If surgical treatment is under consideration, it is advisable that these two types be clearly differentiated; for the operation which will aid the first must be supplemented in order to help the second.

For the first type in which extra-pericardial adhesions play the chief role, Brauer devised an operation called cardiolysis, first performed by Peterson in 1902. It consists briefly in a resection of the sternal ends of the third, fourth, fifth and sixth ribs over the precordial area, leaving the pericardium covered only with soft tissues. Since that time the operation has been slowly gaining in popularity. Bourne recently reviewed twenty-five cases operated upon. There was very definite benefit in seventeen cases, and in some of these improvement in cardiac competency was truly remarkable. There were only two deaths. Harvey and Summers in this country, who report successful cases, are at a loss to understand the little favor with which the operation has been met by American surgeons. It is probably the general profession and the internists who should bear the blame, if any is to be allotted, since it is they who must give the surgeons their opportunity by the proper selection of cases.

In selecting cases it should be remembered that it is only such as show definite evidences of adhesion to the chest wall, with evidence of circulatory embarrassment that are likely to receive much benefit. The extent of valvular damage in the rheumatic cases—the signs of a still active endocarditis—the duration of the decompensation and its degree, should all be searched for in order to form an opinion as to whether, even with its burden lightened, there will be a chance for the myocardium to hold its own. A cure in the real sense is hardly to be expected, but in carefully selected cases there should be good prospects of several years at least of relief.

It is obvious that in the second type of case where the heart is compressed by retraction of the thickened and adherent pericardium, no benefit could be expected from Brauer's operation alone. Daring surgeons have in recent years attacked this even more difficult problem by adding

to Brauer's operation a resection of the whole anterior wall of the adherent pericardium. Schmieden speaks of it as decortication of the heart and compares the process to peeling an orange. The number of cases so operated upon is still small and the mortality high; but the number of cases benefited has also been relatively high and the benefit sufficiently striking to encourage further endeavors to aid these otherwise hopeless patients.

The method of attack is still in the experimental stage, but we will do well to keep our eyes upon the work of the surgeons and attempt, by closer study of these interesting cases, to prepare ourselves to aid them.

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THE USE AND ABUSE OF IODIN IN THE TREATMENT OF GOITER*

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The proper use of iodin in the treatment of goiter is closely dependent upon our fundamental ideas of the goiter problem as a whole. In our present state of knowledge, much of this is hypothesis based upon clinical evidence. It is my purpose in this paper to give my interpretation of hypotheses in regard to goiter developed by Plummer, Boothby and their co-workers at the Mayo Clinic, acquired when I was on their service. I wish to acknowledge this source for the ideas contained in this paper, and to take all responsibility for their mode of presentation.

The classification of diseases of the thyroid used by Plummer is shown in Table I. It is only the first four conditions with

TABLE I

CLINICAL CLASSIFICATION OF THYROID DISEASES
(Plummer)

1. Diffuse colloid goiter.
2. Adenomatous goiter without hyperthyroidism.
3. Adenomatous goiter with hyperthyroidism.
4. Exophthalmic goiter.
5. Myxedema.
6. Cretinism.
7. Childhood myxedema.
8. Thyroiditis.
9. Malignant disease of the thyroid.

which I am concerned in this paper; i. e., diffuse colloid goiter; adenomatous goiter without hyperthyroidism (sometimes called non-toxic adenoma); adenomatous goiter with hyperthyroidism (toxic adenoma) and exophthalmic goiter.

The Normal Development of the Thyroid Gland

Figure I is a diagram based largely upon the work of Aschoff. In non-goitrous regions there is a hypertrophy of the thyroid in the new-born, followed by a regression in infancy and childhood. At adolescence there is again a hypertrophy followed by regression. At such critical periods as pregnancy there may be still further hypertrophy with return to a normal level and there is a gradual diminution in size in old age. In a non-goitrous area these variations in size are not sufficiently large to be recognized clinically. In the male this same cycle, for some unknown reason, is less marked than in the female.

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In the goitrous region, on the other hand, the same changes occur, but they are pronounced enough to be visible and palpable and are recognized clinically as the goiter of the new-born, the goiter of adolescence and the goiter of pregnancy.

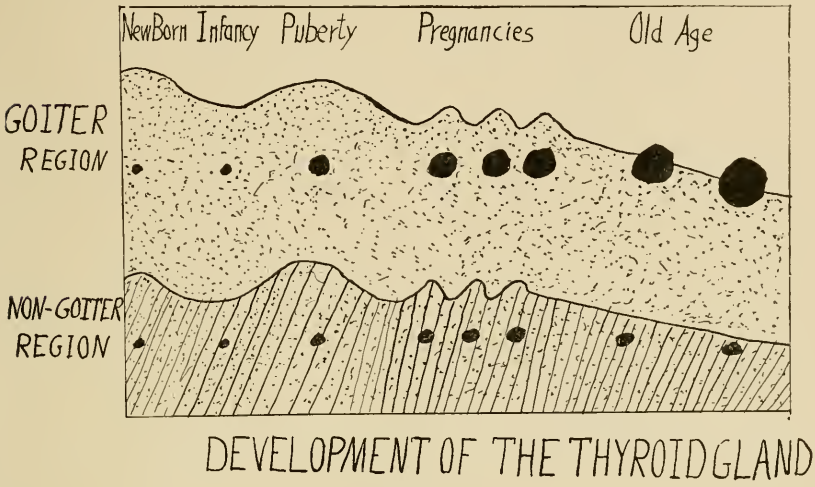


Fig. I

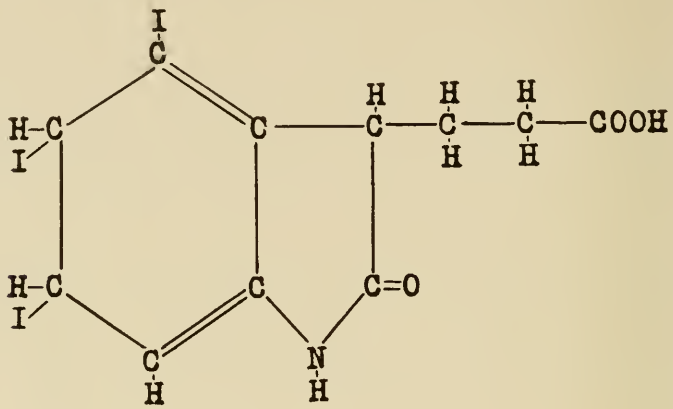
Adenomatous tissue is found in a large percentage of thyroid glands and the acini of the adenoma tend to fill with colloid and to shrink with the rest of the gland. However, adenomatous tissue does not lose its colloid as readily as the rest of the gland and in goitrous regions the adenomas may persist after the rest of the thyroid has become practically normal, or may grow in size until in adult life we may have the hard nodular non-toxic adenoma.

The work of Marine and Kimball and others has emphasized the importance of iodin deficiency in food and water in the etiology of colloid goiter. The work of McCarrison, on the other hand, has emphasized the role of gastro-intestinal infection. Plummer has attempted to harmonize the two views by suggesting that perhaps some alteration in the gastro-intestinal flora may interfere with the absorption and utilization of iodin, especially when only small quantities are ingested.

The Diffuse Colloid Goiter

When the thyroid gland receives insufficient iodin, it is enlarged due to the overdistention of the acini with colloid. If the gland is much enlarged, the increased vascularity is evidenced by the presence of audible bruits. The enlargement of the thyroid in this type of goiter is presumed to be associated

with a difficulty in synthesizing the thyroxin molecule (Figure II), due to iodin deficiency. Since the normal stimulus from the tissues upon the gland for the production of thyroxin is apparently maintained, one must consider such cases to be potentially hypothyroid.



THYROXIN

Fig. II

Marine and Kimball and certain Swiss workers have shown clearly the valuable influence of iodin feeding in adolescent children in the prevention of this form of goiter. Marine states that the administration of 100 to 200 mg. of iodin in any form twice a year is sufficient to prevent the development of simple goiter in man. On the same basis iodin is beneficial in the treatment of goiters of this kind when they have already developed.

I have mentioned above that in diffuse colloid goiter, the body is in a state of potential hypothyroidism. The basal metabolic rate may be normal or as much as from 8 to 18 per cent below normal. The furnishing of thyroxin to the tissues by means of thyroid extract will often cause the goiter to disappear. Clinically it has been observed that bringing the basal metabolic rate to normal or slightly above normal with thyroid extract is often more effective than the administration of iodin, although the reason for this difference is not clearly understood. The absorption of thyroxin from the gastro-intestinal tract is often uncertain, however, particularly in this type of case. It should be noted that the adenomatous tissue asso-

ciated with the diffuse colloid goiter may not necessarily disappear with either form of therapy, although it may be somewhat reduced in size.

The dangers of the administration of iodin in this group of cases must not be forgotten. As a rule, the risk of causing adenomatous tissue to hyperfunction before the age of 25 by the use of iodin is so slight that the risk is justified. However, the Mayo Clinic statistics show that although adenomatous goiter with hyperthyroidism under the age of 20 is rare, that 50 per cent of these cases have followed the use of iodin.

Kimball states that in 309 cases of hyperthyroidism caused by the administration of iodin, there were only six cases in which the only source of iodin had been iodized salt used for the prophylaxis of simple goiter. All of these six were in women over 40 with adenomatous goiters of long duration. Since many such patients become hyperthyroid spontaneously, the iodized salt cannot be necessarily blamed here.

Adenomatous Goiter Without Hyperthyroidism

The characteristic finding in this group is the occurrence of an asymmetrical growth in the neck without general symptoms. Surgery is indicated in case of the development of pressure symptoms, which are usually of two types: respiratory, due to pressure on the trachea, and the symptoms following pressure on the recurrent laryngeal nerve. The exact indications for surgery in this group as a prophylactic measure have not been decided. Undoubtedly a considerable number of these patients become hyperthyroid in later life, but the exact percentage is unknown, and in a goitrous region, where a large number of women have small adenomas, surgery would have to be carried out on a wholesale plan in order to be completely effective. In this connection it must be remembered that the size of the adenomas is no criterion of the possible toxicity, since a small adenoma which is only discovered by deep palpation may be responsible for an intense hyperthyroidism.

The important thing to remember in this group of cases is that iodin should never be given medicinally because of the danger of causing the adenomatous tissue to hyperfunction. The risk is very slight before the age of 25, but becomes greater and greater with increasing age. The exact mechanism by which this occurs is not known. It is a relatively slow process, a matter of days or weeks, and the size of the dose necessary to cause hyperthyroidism has not been determined. Usually the patient gives the history that the adenomas are reduced in size as the hyperthyroidism develops. The most im-

portant aspect of the case is that the hyperthyroidism persists indefinitely after it has once started, even though the administration of iodin is stopped.

Such cases are all too frequent in a goitrous district where many people have adenomatous tissue present. I made a careful study of fifty consecutive cases of adenomatous goiter with hyperthyroidism admitted to the Mayo Clinic for operation. Twenty-five of these patients had previously received iodin, 14 of them on the prescription of a physician. Of these 25 patients, 18 became hyperthyroid following the use of iodin. In four patients the iodin was given apparently after the hyperthyroidism had commenced and became worse, whether due to the iodin or to the course of the disease cannot be stated. Three patients noted no relation of the iodin to their symptoms. Fourteen of these fifty patients, therefore, came to operation because of the ill-advised use of iodin prescribed by physicians. A control series of non-toxic adenomas admitted for operation showed that very few had ever received iodin in any appreciable quantities.

Nor must it be forgotten that iodin given for other purposes may make an adenoma hyperfunction if its presence is not recognized. Thus, I have seen cases made hyperthyroid following the administration of potassium iodide by the internist for asthma, by the syphilographer for syphilis, and by the ophthalmologist for retinitis. Indeed, the only safe rule to follow, especially in a goitrous district, is that iodin should never be given longer than a few days for any purpose without carefully palpating the neck for the presence of small adenomas. The onset of hyperthyroidism following such medication may be so insidious that it may not be recognized by the physician in charge of the case, especially if he is a specialist who is not used to dealing with early cases of hyperthyroidism.

Adenomatous Goiter With Hyperthyroidism

This form of the disease comprises about one-third of all of the cases of hyperthyroidism which are seen. It includes, also, the diffuse adenomatosis described by Goetsch and others. The best evidence at present available points to the following explanation of the mechanism of the production of symptoms in this group of cases:

The symptoms of this form of goiter are presumably due to an excess in the tissues of thyroxin, the normal product of thyroid secretion. When we measure the basal metabolic rate, we are indirectly measuring, in most cases, the concentration of thyroxin or its allied products in the tissues. When the increased amount of thyroid tissue present in the adenomas

begins to function, the supply of thyroxin is greater than the demand and the basal metabolic rate rises. The rise in the basal metabolic rate means an increase in the general oxidative processes of the body (Table II). This means that the tissues require a larger amount of oxygen, which must be supplied by increasing the rate of circulation. To increase the rate of circulation it is necessary to increase the minute volume of the heart. This increase in minute volume is recognized clinically by the tachycardia, high pulse pressure and more forcible heart beat. If this strain upon the heart is continued over a sufficiently long period, it may result in cardiac hypertrophy and dilatation, and finally in cardiac failure.

The increase in metabolism and oxidation also means an increase in heat production. In order to keep the body temperature constant, this must be compensated for by increased heat

TABLE II

RESULTS OF THYROXIN EXCESS IN THE BODY

I. Increased basal metabolic rate.
   A. Increased circulation rate.
      1. Increased minute volume of the heart.
         a. Tachycardia.
         b. High pulse pressure.
         c. Forcible heart beat.
      2. Cardiac hypertrophy and dilatation.
      3. Cardiac failure.
   B. Compensation for increased heat production.
      1. Radiation.
         a. Subjective sense of heat loss.
      2. Evaporation.
         a. Sweating.
   C. Loss of weight with good appetite.
   D. Fatigue.

loss. This is done by increasing the radiation and evaporation. The increase in radiation is often experienced by the patient as a subjective sensation of increased heat loss. Questioning will often reveal the fact that the patient felt more uncomfortable and "stood the heat more poorly" during the preceding summer, that he used less bed clothes at night, and did not wrap up so warmly when on the street in the wintertime. The increase in evaporation is appreciated by the patient as an increased tendency to sweat.

When a patient complains of a loss of weight with a continuing good appetite, three conditions should be considered—pulmonary tuberculosis, hyperthyroidism and diabetes. In hyperthyroidism the weight loss is due to the increased metabolism, which means an increased destruction of tissue. Since

the patient has the habit of eating only a certain quantity of food, he does not usually increase his diet to the point where it balances this loss, and hence loses in weight.

The strain of a long-continued increase in metabolism must also be considered. When a patient has a basal metabolic rate of plus 100 per cent, it is equivalent to the oxidation which takes place when a normal individual is walking at the rate of 1½ miles an hour. If any normal person would walk at this rate every hour of the day, every day of the year for several years without rest, there would certainly be a sense of fatigue and exhaustion; and since the heart is a muscle as well as the skeletal muscles, we find in this exhaustion one of the explanations for myocardial failure in hyperthyroidism of this type.

When a patient shows a tachycardia, a forcible heart beat, a high pulse pressure with cardiac hypertrophy and dilatation, with increased sweating, subjective sense of heat loss and fatigibility and with weight loss associated with good appetite, one is justified in making a definite diagonsis of hyperthyroidism and a determination of the basal metabolic rate will only be confirmatory and not diagnostic.

The exact effect of iodin in this group of cases is not as yet known. It has been shown at the Mayo Clinic that the effect of iodin cannot be predicted in this group of cases with certainty. Further work on this point is necessary.

In the present state of our knowledge, if there is any doubt as to the differential diagnosis between exophthalmic goiter and adenomatous goiter, it is the only safe procedure to give iodin for from 10 days to two weeks before operation. This does not give time enough to make the hyperthyroidism worse if it is due to adenomas and is long enough to reduce the operative risk if the patient has exophthalmic goiter.

Exophthalmic Goiter

Plummer has analyzed the symptoms of exophthalmic goiter into two groups—those due to an excess of thyroxin in the tissues which are identical with those shown in Table II, and which give a clinical picture just like that seen in adenomatous goiter; and those due to a hypothetical "poor product." He believes that this "poor product" may be an incompletely iodized thyroxin molecule. Kendall has synthetized a number of these compounds. Confirmation of this idea is found in the work of Weir, who showed that the total iodin is less than normal in the thyroid gland of exophthalmic goiter, and the percentage of the total iodin present as thyroxin is also less than normal. After giving iodin to the patient, the total iodin

content of the gland increases and the percentage of total iodin as thyroxin also rises. It must be emphasized that as yet we do not know the exact mechanism by which iodin effects an improvement in exophthalmic goiter. The idea that an incompletely iodized molecule of thyroxin is iodized by the administration of iodin is only at present an extremely satisfactory working hypothesis, which may be confirmed, supplanted or modified by later work.

The characteristic symptoms produced by these substances in the tissues (Table III) form the distinctive clinical picture seen in exophthalmic goiter. The exact clinical picture at any given moment will be the result of the balance between the amounts of thyroxin and of "poor product" present in the tissues.

TABLE III

RESULTS OF "POOR PRODUCT" EXCESS IN THE BODY

Physiological State		*Anatomical Changes*
1. Increased basal metabolic rate and its consequences.	1. Stimulation. 2. Nervousness. 3. Stare. 4. Muscular weakness. a. Cardiac weakness. 5. Emotionalism and irritability. 6. Tremor. 7. Choreiform movements. 8. Red elbows and scapulae. 9. Low resistance to infection. 10. Nausea and vomiting. 11. Diarrhea. 12. Furrowed and fissured tongue. 13. Delirium. 14. Jaundice. 15. Fever. 16. Death.	1. Exophthalmos. 2. Trophic nails. 3. Pigmentation. 4. General organ degeneration.

Plummer recognizes that the ultimate cause of exophthalmic goiter is unknown, but he speaks of a stimulus of unknown origin which acts upon the thyroid gland and compels it to hyperfunction.

The results of an excess of "poor product" in the body may be grouped into two classes (Table III)—the alterations in physiological state, and the anatomical changes which appear after long-continued intoxication. Some of the symptoms need further discussion. It will be noted that many of them are quite analogous to those seen in alcoholic intoxication.

The "poor product" also increases the metabolic rate, and, hence, will be responsible, in part, for the same group of symptoms as that caused by thyroxin excess in the body (Table II).

Stimulation is a term which is somewhat difficult to define. It is one of the earliest things seen in a patient with exophthalmic goiter. It is best expressed as being the same physiological state as that seen in a normal individual after the third cocktail. There is a great deal more of self-assurance than the occasion warrants. This attitude is in marked contrast to the self-pity exhibited by the neurashthenic under similar conditions.

Plummer groups the eye signs into two groups—the stare and the exophthalmos. The stare is a composite of the widened eye slit, the infrequence of winking and a general appearance of increased tension of the ocular muscles. The patients will sometimes state that they feel as if their eyes were being pushed out from behind. The exophthalmos is the anatomical residual of this condition, and usually takes some months to develop.

The general muscular weakness is quite a characteristic symptom of exophthalmic goiter. Although some evidence of muscular degeneration has been reported by certain pathologists, most of the weakness is probably functional, since the administration of iodin will often clear it up within a few days. The heart muscle is affected in the same way, and, hence, cardiac decompensation is often more marked in exophthalmic goiter than in adenomatous goiter with hyperthyroidism. The use of iodin alone without the administration of digitalis will often entirely clear up badly decompensated cases with auricular fibrillation.

This characteristic muscular weakness is often made use of in diagnosis. Due to quadriceps weakness, the patient finds it very difficult to step up upon a chair without taking hold of something for support. He may have been quite unaware of the extent of this weakness, or, possibly, may give a history of difficulty in stair-climbing. This is in marked contrast to the neurasthenic, who is quite certain that the feat is impossible, but who succeeds quite well in the attempt often after quite a good deal of waste effort.

The emotionalism and irritability are analogous to that seen in the "crying drunk" and the "irritable drunk." The tremor is apparently an exaggeration of that normally found in exhaustion. One of the early signs of "poor product" intoxication is the great restlessness. Plummer speaks of "purposeful movements without any purpose." The patients are constantly shifting their position, smoothing their clothing, rearranging their hair, etc. In a more exaggerated case, the movements become purposeless and wildly choreiform, and the clinician may wonder whether or not a true chorea is not also present.

This extreme restlessness plus an unusual susceptibility of the skin leads to a characteristic red flush over the elbows and scapulae after the patient has been a few days in bed, and the elbows may become so chafed and sore that it is necessary to bandage them.

The patient with exophthalmic goiter is more liable to infections, such as tonsillitis and pneumonia, and the infection makes the symptoms of the disease much worse; hence, a vicious circle is often established.

In cases of goiter crisis, the nausea, vomiting and diarrhea may be intense and may terminate in jaundice or in death. Toward the end the temperature regulating mechanism may be deranged so that the temperature may be elevated to a very high degree.

In patients who have had exophthalmic goiter for long periods, certain anatomical changes may become apparent. The most important of these is the exophthalmos. Trophic changes in the nails are not uncommon. They may become ridged, spade-like, broadened and turned upward from the matrix, so that the patient may have noticed an increasing difficulty in keeping them clean since the onset of the disease. A diffuse brownish pigmentation may be sometimes seen in long-standing cases of exophthalmic goiter, and may suggest Addison's disease. The cause is unknown. In severer cases there may be a general organic degeneration, with evidences of cardiac, hepatic and renal insufficiency.

Differential Diagnosis

The importance of carefully differentiating between the symptoms due to thyroxin excess and those due to "poor product" is that iodin will relieve completely all of the "poor product" syndrome with the exception of the anatomic residuals, but will not affect the syndrome due to an excess of pure thyroxin.

The most important group of differential points between adenomatous goiter with hyperthyroidism and exophthalmic goiter is the physiological status of the patient as described above. Further differential points are shown in Table IV. It should be noted that adherence to the so-called cardinal symptoms of exophthalmic goiter will lead to many mistakes in diagnosis. I have seen patients with exophthalmic goiter, without exophthalmos, without a palpable thyroid, without tremor, without tachycardia, and much more rarely with a normal basal metabolic rate. The diagnosis cannot be made by the palpation of adenomas in the thyroid, for, as the table

shows, one-third of the cases of exophthalmic goiter will reveal adenomas to either the clinician or the pathologist. Hence, the use of this point will make a 33 per cent error in diagnosis. Exophthalmos is only present in 30 per cent of the cases of

TABLE IV

DIFFERENTIAL DIAGNOSIS OF HYPERTHYROIDISM

	Adenomatous Goiter	*Exophthalmic Goiter*
Average age	48 yrs.	37 yrs.
Average duration of goiter	16 yrs.	4 yrs.
Average duration of symptoms	2-3 yrs.	< 1 yr.
Onset	Gradual	Sudden
Adenomas present	Yes	33%
Bruits and thrills	< 4%	70%
Exophthalmos	No	62% (3 mos. 30%) (2 yrs. 80%)
Associated arteriosclerosis	Common	Rare

three months' duration, and even after two years it is not present in 20 per cent of the cases. Hence, if these patients were diagnosed adenomatous goiter with hyperthyroidism because of the presence of nodules in the thyroid and the absence of exophthalmos, the diagnostic error will be very great and serious mistakes in preoperative therapy may be made.

Treatment

As we have said before, iodin removes the "poor product" syndrome, but does not affect the other manifestations of the disease. The course of a typical case is shown by the diagram in Figure III.

Exophthalmic goiter usually occurs in waves of about three months' duration at irregular intervals, with a more or less complete period of recovery between. The course of events may be pictured as follows, by aid of the diagram: The unknown stimulus causing exophthalmic goiter strikes the thyroid gland and stimulates the secretion of thyroxin. The gland is unable to respond sufficiently, so in addition to the thyroxin a large amount of incompletely iodized "poor product" is given off as well. Hence, in the first wave the relative amount of poor product is high, and the administration of iodin will correspondingly be very effective. At the onset of the second wave the stimulus strikes again, but this time the gland is better prepared to meet the demand, and, therefore, puts out a relatively larger quantity of thyroxin. Hence, the administration of iodin will not be quite as effective. As is so often the case, a preliminary ligation is shown in the diagram as performed at this point. The patient usually seeks the con-

sulting physician at the height of a wave, and after a period of improvement, the surgeon operates. To the ligation which undoubtedly has some value is usually ascribed the whole succeeding drop which in many cases would have come spontaneously.

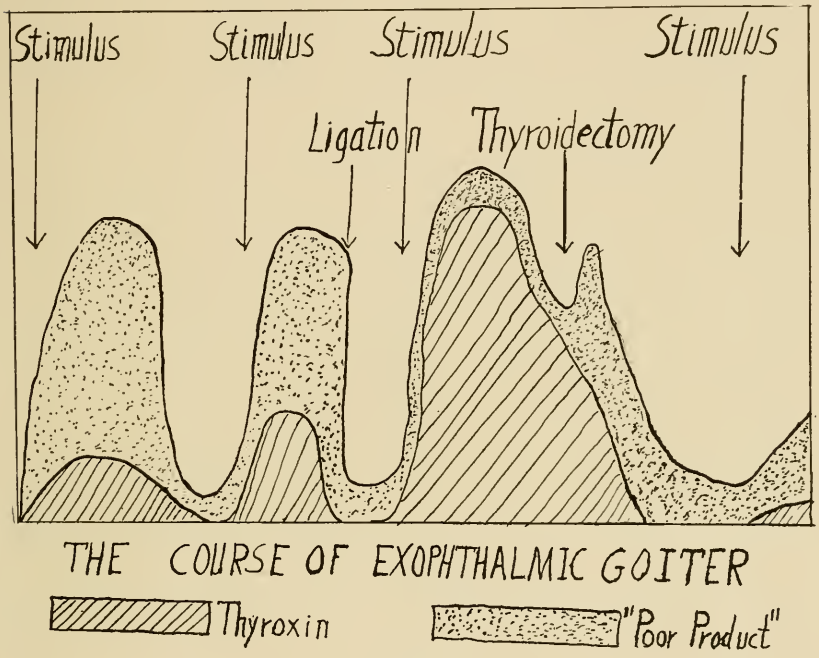


FIG. III

The stimulus strikes again, and this time the gland has become so well trained (often it has increased in size) that it secretes thyroxin almost entirely to meet the demand. This explains the cases not infrequently seen in which the patient returns after ligation, having gained in weight and with much subjective improvement, but with a considerable increase in basal metabolic rate over that taken before ligation and an increased pulse rate. Iodin will have little influence upon the symptoms in such a case except as a preoperative preparation.

Thyroidectomy is done, and since the patient has been iodized there is only a slight post-operative reaction. The fatal post-operative crisis which we are trying to avoid is due to the "poor product."

Let us suppose that our patient is one of the group who does not have complete relief from thyroidectomy. There is a little

emotionalism, weakness, palpitation and tachycardia. The metabolic rate may be normal or slightly elevated. Since these are "poor product" symptoms, we find that iodin is almost specific for such symptoms occurring after thyroidectomy. In a much smaller number of cases the remains of the thyroid gland hypertrophy, and if the stimulus strikes again, enough new tissue may have formed to require reoperation. These patients should be tested with iodin, and if the symptoms can be controlled, this is all that is necessary; but if not, another operation, to reduce the amount of active thyroid tissue, should be contemplated.

In a series of approximately 1,000 cases iodized before and during operation at the Mayo Clinic, there was no death from true post-operative exophthalmic goiter reaction. I happened to see the first death which broke the series, and this furnished a very instructive lesson in the use of iodin. The patient was a male who had been diagnosed as exophthalmic goiter by his home physician and placed on iodin some time before coming to the Clinic. This was later discontinued. A diagnosis was made at the Clinic of adenomatous goiter with hyperthyroidism, and he was sent to the hospital for operation without iodin preparation. The pathologist made a diagnosis of exophthalmic goiter from the frozen section, and immediately notified the clinical service. Although the patient was given, immediately, large doses of iodin, he died in intense hyperthyroid crisis 36 hours later. In this case the iodin had so masked the "poor product" symptoms that a mistake in diagnosis was made. After this incident, which I have described above, it has been the practice to give patients, in whom there is any doubt as to diagnosis, iodin for from 10 days to two weeks before operation.

It should be emphasized that the use of iodin is not a cure for exophthalmic goiter. Cases have been kept upon iodin for months, and it has been later necessary to operate. Its major use is as a preoperative measure to prevent the fatal post-operative hyperthyroid crisis. Its minor use is for the relief of symptoms recurring after thyroidectomy.

Lugol's solution was first used for the reason that it is the Pharmacopeial preparation containing the most iodin per unit volume. Other forms of iodin also appear to be effective. Since the iodin is excreted in the urine in a few hours, it is necessary for the doses to be fairly frequent. The usual dose is m x of Lugol's solution twice daily for the average case. Smaller doses will benefit some of the cases, but not all of them. The dose is usually doubled the day before operation. Two favorable effects are usually seen from the iodin. One

occurs in a few hours or in the first day, and is seen to best advantage in severe crisis cases. Between the seventh and the ninth day a rather sudden change in symptoms frequently occurs, which is usually paralleled by a rather sudden fall in the pulse rate and the basal metabolic rate. It is usually safer to wait for a few more days after this sudden drop before operation, the final decision being dependent, also, upon other factors, such as gain in weight and strength, cardiac complications, etc.

In goiter crisis a dose of fifty minims should be given every few hours. A mistake is sometimes made of discontinuing the dose because the patient vomits. The vomiting is one of the "poor product" symptoms, and enough iodin is soaked up by the gastric mucosa to help control this as well as the other symptoms. The dose should be immediately repeated or given by rectum. Other factors in the crisis must not be neglected, such as infection, uremia, cardiac failure, or acidosis. I saw one patient lapse into a coma-like condition with Kussmaul breathing and a CO2 combining power of 23 volumes per cent. She was restored within a few hours by giving both glucose and iodin.

No special virtue has been demonstrated for organic compounds of iodin except in the minds of the drug houses that sell them except as a means of concealing the taste of the iodin and its salts. If the patient complains of the taste, it can be

TABLE V

DEATHS AND DEATH RATES FOR GOITER IN MARYLAND

Year	*Deaths*	*Death Rate Per 100,000*
1910	11	0.8
1911	15	1.1
1912	10	0.8
1913	24	1.8
1914	19	1.4
1915	22	1.6
1916	15	1.1
1917	28	2.0
1918	27	1.9
1919	34	2.4
1920	34	2.3
1921	31	2.1
1922	41	2.8
1923	45	3.0
1924	42	2.8

The extent of the goiter problem in Maryland is shown in the table above, which shows the deaths from diseases of the thyroid in Maryland as supplied me by the State Department of Health. Part of this increase, if not all of it, is probably due to improvement in diagnosis.

given in grape juice. The absorption of iodin ointments so commonly used in the treatment of colloid goiter has been shown to be very variable, depending upon the ointment base employed, the skin area and the individual. If the patient is instructed to rub the ointment over the goiter, it should be recognized by the physician that this site is selected for psychic reasons only, not for any virtues it may possess. It is better to give a known dose of iodin by mouth, which can be absorbed.

Summary

1. Iodin is of distinct value in the prophylaxis of simple or colloid goiter. It is also of value in the treatment of this condition, but in many cases thyroid extract will give better results.

2. Iodin is contraindicated in adenomatous goiter without hyperthyroidism after the age of 25 because of the danger of making the adenomatous tissue hyperfunction.

3. The exact status of iodin in adenomatous goiter with hyperthyroidism has not been determined. In any case of doubt as to the differential diagnosis between this condition and exophthalmic goiter, it should be given for from ten days to two weeks before operation.

4. The clinical picture of exophthalmic goiter is composed of two parts—that due to an excess of thyroxin in the tissues, and that due to an excess of a hypothetical "poor product." Iodin removes the physiological symptoms caused by the poor product, but does not effect those caused by the thyroxin. It does not affect the anatomical changes which have been left as a result of a long-continued intoxication with poor product.

5. Iodin is only a preoperative preparation in exophthalmic goiter and not a cure. It also finds a valuable place in relieving the patient of the symptoms which sometimes recur after thyroidectomy.

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BULLETIN

OF THE

SCHOOL OF MEDICINE UNIVERSITY OF MARYLAND

EDITORIAL

During recent years the publication of the *Bulletin* has constituted an increasing burden upon the managing editor. With very little help from the faculty, he has done all that one man unaided could do to make this journal worthy of the school which it represents. The task has been an impossible one.

This situation was laid before the Alumni Council, and before the Medical Council, during the past winter; and the urgent need of a reorganization of the *Bulletin* explained. Both bodies showed a quick appreciation of the importance to the school of a publication which would more adequately portray to our Alumni and to the medical world the professional, educational and administrative accomplishments of the institution.

By agreement between these two councils a board of editors was appointed to assist the managing editor. This board consists of three members appointed from the faculty and of two appointed by the Alumni Council. The Alumni Council, moreover, agreed to subscribe a sum judged sufficient to allow the publication of the *Bulletin* as a quarterly, with the annual catalogue of the school as a supplementary number.

In its new form, therefore, the *Bulletin* will owe such success as it may achieve to the combined efforts of the alumni and of the faculty, and it is to be desired that the results obtained will encourage other instances of such co-operative effort in the cause of our school.

It is the hope of this board of editors that all departments of the school may be represented by original contributions in the pages of this *Bulletin* and that these contributions may be based directly upon the work in the wards, the operation room, the laboratories and the post-mortem table rather than upon

the writings of other men. May they carry something of interest and of value from our active clinics of every day to those who worked here in former years.

It will not be forgotten, on the other hand, that as a school with a long and honorable history we may derive stimulus for the future from studies of the lives of those who in the past played a role in the life of the institution.

By means of editorials by heads of various departments it is planned to keep our readers informed of the problems there are to meet, and the changes and the progress that are being made in all parts of the school.

The alumni notes will be continued, and this department will welcome all communications concerning our graduates.

The board of editors in making this announcement in this, the first number of the new *Bulletin*, wish to express the hope that thus refinanced, and restaffed, and with a definite program, the *Bulletin* may show a continuing improvement in form and in substance.

REUNION OF CLASS OF 1876

On Saturday, February 27, 1926, a reunion was held of the Class of 1876 at the Hotel Rennert. All the surviving members of the class were present, with the exception of Doctors D. W. Smouse, of Los Angeles, Cal., and J. H. Yount, of Newton, N. C.

The members attending were Doctors Wilmer Brinton, T. Chew Worthington, W. E. Wiegand and Samuel J. Belt, of Baltimore, Md.; J. F. H. Gorsuch, of Fork, Md., and William H. Marsh, of Solomons Island, Md. The youngest member of the class was Dr. Worthington, who is seventy-one, and the oldest, Dr. Belt, who is eighty-two years old. Dr. J. M. H. Rowland, dean of the Medical School and a former student of Dr. Brinton, was an invited guest.

Dr. Wilmer Brinton, who was largely responsible for the reunion, has spent his professional life in Baltimore. In 1883-1884 he attended European clinics for eighteen months (Prague, Dresden, Vienna, Berlin and Dublin). During his stay abroad, he frequently wrote to Dr. Rohe, who was then publishing a medical journal in Baltimore. Many of his articles described Carl Braun's clinics in obstetrics. These articles attracted the attention of the men organizing the Baltimore Medical College, and when Dr. Brinton returned he was invited to accept the chair of obstetrics and was advised to accept by

From Left to Right—Doctors Gorsuch, Worthington, Rowland, Wiegand, Marsh and Brinton.
Doctor Belt was present, but arrived after the picture was taken.

his former teacher, Dr. William T. Howard, who was then professor of gynecology at the University of Maryland. Dr. Brinton was a forceful teacher with large experience and always commanded the respect and confidence not only of his classes, but of his colleagues and professional brethren. It was largely due to his energy and efficiency that the Baltimore Medical College achieved a fair measure of success, at a time when proprietary medical schools were too numerous and medical educational ideals too low. He is still active in practice and looks as if he were due to enjoy many more years of usefulness.

Dr. T. Chew Worthington, the youngest member of the class, has also spent his professional life in Baltimore, with the exception of the first two years of his practice in Clarksburg, Montgomery County, Maryland. For several years he engaged in general practice, but during the last thirty years he has devoted himself to the practice of diseases of the nose and throat, with great success. It is impossible to believe that Dr. Worthington is over seventy years of age, as he has the appearance of a man of sixty.

Dr. W. E. Wiegand, until his retirement ten years ago, was engaged in general practice. He was a successful and earnest practitioner and a man highly regarded by his colleagues of the medical profession and his clientele. He is now living at Roland Park with his family.

Dr. Samuel J. Belt, the oldest member of the class, spent a number of years in pharmacy before studying medicine. He is still practicing in Baltimore.

Dr. J. F. H. Gorsuch, though practicing in a rural district (Fork, Md.), is well known to all the medical profession of Baltimore and the State. He has been for many years a familiar figure at all the Medical Society meetings, and no member of the Baltimore County or Baltimore City societies has a greater number of sincere friends. His geniality, kindness, courtesy and unfailing good humor endear him to the whole profession of the State. His patients idolize him and few men have a greater hold upon the affection and regard of patients and medical colleagues than Dr. Gorsuch.

Dr. William H. Marsh, after his graduation in 1876, was senior resident physician at Bay View Hospital for a year and then practiced at Thurmont, Md., until 1878, when he went to Solomons Island, Md., to engage in general practice. In October, 1890, he was appointed acting assisting surgeon in the U. S. Public Health Service, then known as the Marine Hospital Service, and placed in charge of the emergency hospital at that point. He has continued in that position to the present time

and has the distinction of being the oldest officer of the corps on active duty. While Dr. Marsh has given up much of his active practice, he still keeps up his society affiliations and is now president of the Calvert County Medical Society and a member of the American Medical Association, Southern Medical Association, Medical and Chirurgical Faculty of Maryland, Medical Veterans of the World War and the Southern Maryland Society.

Dr. David W. Smouse, of Des Moines, Iowa, and Los Angeles, Cal., practiced first in Monroe, Iowa, for three and a half years and afterward in Des Moines until ten years ago, when, on account of the illness of a member of his family, he moved to Los Angeles. While in Des Moines, it was considered that he had the largest practice in the State and he had considerable consultation work throughout Iowa and neighboring States. He helped found a hospital of three hundred beds. He is now engaged in banking, insurance and other business interests. His only recreations are traveling and hunting, in which he is able to tramp and keep up his score with the best of them. Dr. Smouse has promised to pay us a visit this summer, and we shall be very glad indeed to see him.

Dr. J. H. Yount, of Newton, N. C., is the other surviving member of the Class of 1876. He is seventy-two years of age and has retired from active practice of medicine, though he still has some office and consultation work. He is now chiefly interested in banking and cotton mills.

J. M. H. Rowland.

DEATHS

Dr. Hudson Jerome Kinne, Frankford, Mich.; B. M. C., class of 1892; aged 64; died, March 18, 1926, of myocarditis.

Dr. William Henry Holland, Ninety-Six, S. C.; class of 1891, also a dentist; aged 62; died, March 7, 1926.

Dr. William R. Siron, McDowell, Va.; class of 1891; aged 61; died, February 16, 1926.

Dr. Samuel Lee Stonebraker, Tyrone, Pa.; P. & S., class of 1905; aged 45; died, February 25, 1926.

Dr. William Archibald Monroe, Sanford, N. C.; class of 1886; aged 62; died, February 26, 1926, of influenza.

Dr. George Edgar Robison, Salt Lake City, Utah; P. & S., class of 1898; aged 56; died, February 10, 1926.

Dr. Fletcher F. Porter, Pickens, S. C.; P. & S., class of 1893; aged 56; died, February 24, 1926, of uremia.

Dr. John H. Harden, Cheraw, S. C.; class of 1887; aged 63; died, December 31, 1925.

Dr. William E. Burton, Baltimore, Md.; B. M. C., class of 1897; aged 63; died, March 28, 1926, following a long illness.

Dr. Alexander Grier Appleby, Valley City, Ohio; P. & S., class of 1895; aged 52; died, April 4, 1926, of cerebral hemorrhage.

Dr. Harlan Edward Linehan, Brooklyn, N. Y.; B. M. C., class of 1907; aged 42; died, March 9, 1926, of myocarditis.

Dr. Edward G. Proctor, Kane, Ill.; P. & S., class of 1882; aged 70; died, April 3, 1926.

Dr. Virgil Newton Seawell, Faison, N. C.; Washington University School of Medicine; class of 1868; a Civil War veteran; aged 86; died, April 1, 1926.

Dr. Fred Anthony Hadley, Walden, N. Y.; P. & S., class of 1895; aged 63; died, March 23, 1926, of heart disease.

Dr. William Franklin Taylor, Laurel, Md.; class of 1884; aged 71; died, April 26, 1926, of heart disease.

Dr. Wilbur Fisk Shirkey, Charleston, W. Va.; P. & S., class of 1894; aged 67; died, March 29, 1926, of heart disease.

Dr. Samuel Harper Smith, McKeesport, Pa.; P. & S., class of 1881; aged 70; died, March 6, 1926, of carcinoma of the bladder.

Dr. Frederick E. Fooks, Baltimore, Md.; Washington University School of Medicine, class of 1873; aged 77; died, March 25, 1926.

Dr. Edward W. Toole, Selingsgrove, Pa.; P. & S., class of 1881; aged 74; died, March 13, 1926.

Dr. John Henry Fochtman, Cozard, Nebr.; P. & S., class of 1883; aged 63; died, March 13, 1926, of heart disease.

Dr. Frank Robert Humphreys, Bradford, Pa.; P. & S., class of 1895; served in the M. C., U. S. Army, during the World War; aged 54; died, February 27, 1926, following a long illness.

Dr. William Caulk, St. Michaels, Md.; class of 1867; aged 81; died, May 18, 1926.

Dr. James McManus, Lindley, N. Y.; P. & S., class of 1885; aged 66; died, January 5, 1926, of pulmonary tuberculosis.

Dr. Sidney G. White, Warsaw, Ind.; B. M. C., class of 1893; aged 61; died, April 10, 1926, of nephritis.

Dr. Haughton Baxley, Markham, Va.; formerly of Baltimore, Md.; P. & S., class of 1889; aged 58; died, May 28, 1926, of pneumonia.

Dr. William Bruce Borror, Morgantown, W. Va.; class of 1918; aged 46; was killed by an assailant, April 15, 1926.

Dr. Maurice Budwig, Cleveland, Ohio; B. M. C., class of 1898; aged 49; died, April 19, 1926, of heart disease.

Dr. John Francis Spearman, Sharon, Pa.; P. & S., class of 1912; aged 36; died, April 4, 1926.

Dr. J. Brown Wallace, Tampa, Fla.; class of 1897; served in the M. C., U. S. Army, during the World War; aged 52; died, December 31, 1925, of pneumonia.

Dr. Robert Gerstell, Keyser, W. Va.; class of 1873; aged 76; died in February, 1926.

Dr. Thomas H. Brayshaw, Glenburnie, Md.; P. & S., class of 1885; aged 66; died, May 12, 1926, of heart disease. Dr. Brayshaw was one of the best known and beloved physicians of Anne Arundel County and will be sorely missed by a large and loyal clientele. He is survived by a son, Thomas H. Brayshaw, Jr., a student at the University of Maryland.

Dr. Richard H. Smith, Havre de Grace, Md., class of 1875; aged 78; died, May 13, 1926, following a lingering illness.

BOOK REVIEW

Pediatrics of the Past: An Anthology. Compiled and edited by John Ruhrah, M.D., Professor of Children's Diseases, University of Maryland. Foreword by Fielding H. Garrison, M.D. Octavo, 600 pages, 54 text illustrations, 18 full-page plates. Price, $10.00 net. New York: Paul B. Hoeber, Inc., 1925.

Dr. Osler said: "To study the phenomena of disease without books is to sail an uncharted sea." This same wise man has also stated somewhere that by the historical method alone can many medical problems be approached.

In "Pediatrics of the Past," Dr. Ruhrah has made available the charts used by countless generations of physicians by collecting together in one volume the important contributions to the medical literature of the child period. These appear as translations or reproductions either of pertinent paragraphs, whole pages, and, in some instances, of replicas of the entire book of selected writers, extending from Hippocrates in the third century, B. C., to Meissner in the early nineteenth.

In an illuminating foreword, Dr. Garrison speaks of it both as an anthology and a source book. To the non-specialistic reader it will be more, in that each piece is introduced by a short biographical sketch, with interpretive comments, and such allusions to contemporaneous men and events, that serve to sharply visualize the worthy old author as a person. It is in these sketches and in the non-obstrusive footnotes that Dr. Ruhrah has not only impressed his personality, but also has indicated the wide range of his reading. They are not only of fascinating interest, but frequently exhibit an ironical humor that adds to their pleasure. He takes more than one occasion to point out that the foibles of today are, perhaps, not any wiser than the apparent follies of the past. Certain it is that in every age there is a frontier of knowledge, beyond which all is "fancy free."

It is impossible to give an adequate idea of the scope of this work by quotation or description. The labor of getting satisfactory translations alone must have been tremendous; thus, that of Paulus Bagellardus (?-1492) is the first complete English translation of this book, which was one of the first medical books written after the invention of printing. Consider, too, that the book of Cornelius Roelans (1450-1525) is practically a collection of medieval pediatric literature, and this translation was made from photostat copies of the original. The apparent care in the selection of portraits and the numerous reproductions of original pages, title pages, and old illustrations add decided value. The reproduction of the woodcuts of the Louffenburg poem are, perhaps, the first illustrations of

medical child life. They show you how to clothe a baby, how to bathe it, how to feed it, and even the first model of the 1926 "pushmobile."

Of the writings before the age of printing, those of Soranus of Ephesus in the second century, are models of careful and truthful observation. It is not surprising, therefore, to learn from Garrison, that to a book on obstetrics by the same author, no additions of value were made for fifteen hundred years.

Dr. Ruhrah points out that with the flood of books following the introduction of printing, four have been preserved, which had to do with diseases of children. The first is that of Bagellardus, an Italian, published in 1472; the second, Metlinger, German, 1473; the third, Roelans; and the fourth, the poem of infant and child welfare of Louffenburg in 1491. Extensive representations of all of these appear.

In reading the "Boke of Children," of Thomas Phaer, the first English book on pediatrics, in the light of Ruhrah's interpretive preface, you somehow get the idea that this versatile old worthy who was not only a doctor, but also a lawyer and a literary man, was perhaps, of the three, least the doctor, and it is possible that his familiarity with the making of books, induced him to "rush into print" with this one, and thus unwittingly secure an immortal fame.

Certainly it suffers, by comparison, with the "Children's Book of Felix Wurtz." This copy and illustrations are from an English translation "from the second translation into Low Dutch, from the twenty-eighth copy printed in the German tongue." The whole chapter is delightful. The title page is a gem; the clean cut observations and suggestions as to treatment, especially as to prevention of postural injuries; the evident sincerity and interest of the author in the welfare of the child; his scorn of the neglectful, fairly lift you. When in addition, Ruhrah states that as a surgeon he ranked next to Ambrose Paré and his observations in surgery were equally penetrating, you feel that you have been "holding high converse with the mighty dead."

In the chapter on Francis Glisson (1597-1677) you will find a familiar name. As an addition to your reminiscent anatomical knowledge perhaps you will be astonished to find that he was also the author of an almost perfect piece of clinical research on Ricketts. Especially will you enjoy the discussion of the suitableness of the name, "Ricketts."

You come to Robert Pemell (?-1653). Up to then, and indeed afterward, the cultured English physician wrote in Latin,

and this was then translated into English. Pemell wrote in English, as then used, and that part of the table of contents as quoted on page 292, reads like a page from Rabelais.

The deft handling of Sydenham you will much appreciate. He has always been one of the "Heroes of Medicine." You will ponder as to what were the reasons that caused him to leave London the time of the Great Plague; certainly his personal bravery had not only been tested in battle, but in numerous contacts with infection in individual cases. Then again the curious paradox of fame that he, the greatest of English clinicians, was never elected a Fellow of the College of Physicians of London, while Paré, the greatest of surgeons, only achieved like honor in the Surgical Society of Paris, because his name and fame were required by the surgeons in their fight against the physicians.

Let us skip, not for want of interest, but for want of space, Mayow; Harris. Perhaps here may be recited, occurring as it does in the account of the latter, an anecdote of Radcliffe, the first owner of the "Gold-headed Cane," as it illustrates, not only Dr. Ruhrah's amazing research, but also why a reader cannot afford to skip even a single page. Radcliffe, when asked by King William, in reference to his swollen ankles, "What think you of these?" replied: "I would not have your Majesty's two legs for your three kingdoms." Von Rosenstein; Cadagon; Whyatt; and then to our own Benjamin Rush. He was a signer of the Declaration of Independence. Perhaps of greater importance in an indirect way, he influenced Paine to write "Common Sense," possibly the most potent of progandist writings ever printed in this country. In reading this sympathetic review we find ourselves forgiving him for lending an ear, if not more active assistance, to those who tried to oust Washington. Unlike Sydenham, he "carried on" during the yellow fever epidemic of 1793. George Armstrong; Underwood, whose "Treatise on the Diseases of Children," first issued in 1784, was the accepted standard for sixty-two years. Samuel Bard, of New York, professor of King's College, whose treatise on diphtheria, "Angina Suffocative," is an American classic.

The chapter on pediatric poems is one of the best in the book. We have already mentioned that of Louffenburg. How we are thrilled by this:

> "For he's not always hungry when he squalls,
> And oft for neither meat nor drink he calls,
> As when a pin, which often happens, pricks,
> Or gripes his lettle entrails tear, he shrieks."

Shades of Mark Twain, he never saw this, but of the same theme, he made use.

We turn to the consideration of the Heberdens. Of the father, Ruhrah quotes: "He was pious without hypocrisy, virtuous without austerity, and beneficient without ostentation." In his "Epitonee of Diseases Incident to Children," you will find clear and stately English as used today. A comparison with Pemell is inevitable. This book ends with two extensive bibilographies, more of interest to the specialist in Pediatrics, one of Messrier and one by Ruhrah.

Just one more word: It should be a source of pride to the medical profession of Baltimore, that two works recently have appeared, one a life of an attractive personality, of whom always will, "The memory be green," Sir William Osler, a former member, by a former member, Dr. Harvey Cushing; and the other, this, by Dr. John Ruhrah, who has made attractive, the personalities and works of men long since gone, and of whom but for this book, we would not know and would care less. I would venture, that Dr. Ruhrah had the more difficult task.

G. CARROLL LOCKARD.

Blood Chemistry, Colorimetric Methods. Md. Ed. Stone, W. J. Paul B. Hoeber Co. Price, $3.25.

A compilation of the methods for the study of blood chemical changes in ordinary use in hospital work. The discussion of the interpretation of these tests is in many places inadequate. The final chapters on "Dietetics" and "Treatment of Diabetes" might well be omitted, as they are not in keeping with the rest of the book and are too brief to cover the field satisfactorily.

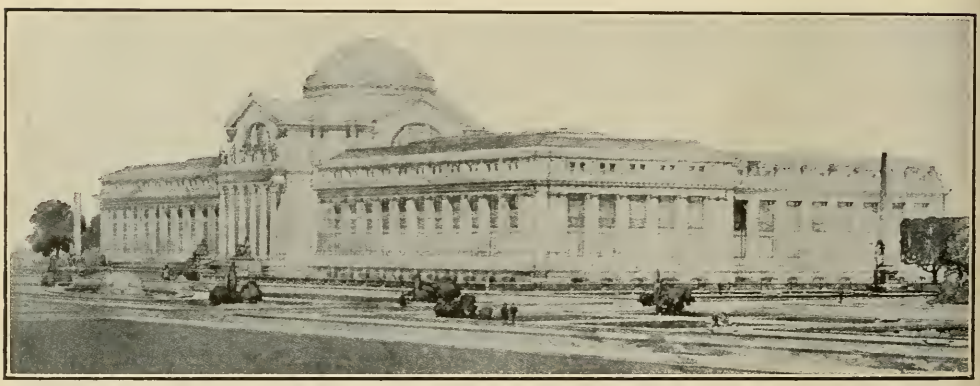
REED ROCKWOOD.

A Textbook of Pathology, General and Special. By J. Martin Beattie, M.A. (N.Z.) M.D. (Edin.) M.R.C.S., L.R.C.P. (Lond.), Professor of Bacteriology, University of Liverpool, etc.; W. E. Carnegie Dickson, M.D., B.Sc., F.R.C.P. (Edin.), Pathologist to the West End Hospital for Nervous Diseases, London, etc. With 499 illustrations in the text and 17 colored plates from original preparations. Third Edition. St. Louis: C. V. Mosby Co. 1925.

The chapters on general pathology are well written and illustrated with excellent photographs, photomicrographs and drawings. Chapter VI, on "Inflammation and Repair," is especially well written for medical students, and the reproduction of beautiful illustrations from Dr. James W. Dawson's Gold Medal Thesis on Inflammation is of great value to the text.

The chapters on special pathology compare favorably with most American textbooks. The usual conditions one meets with at the autopsy table or in the surgical pathological laboratory are accurately described and accompanied by illustrations from the authors' own laboratories. Description of the unusual and rare conditions are inadequate, and it is to be regretted that more references are not given to aid the student or practitioner in the solution of their problems.

W. J. Carson.



BULLETIN

OF THE

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UNIVERSITY OF MARYLAND

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WHY A DEPARTMENT OF HEALTH?*

By JOSIAH S. BOWEN, M.D.

My immediate predecessor in his annual address suggested a closer cooperation between the profession and the Departments of Health. At the semi-annual meeting in Frederick, last October, considerable time was consumed in debate, condemning what is apparently, because of Health Officials' activities, as tending toward State Medicine. Rather recently there has appeared in one of the Baltimore papers, an article, under the title, *"Maryland a Free State,"* in which it was made to appear that our death rate was higher than that of a nearby state. Considering these references the speaker is prompted to choose the following as the title of this address:

"Why a Department of Health, Is It Accomplishing the Purposes for Which It Was Created, Does It Serve the Public, Does It Serve the Profession, What of the Future?"

In Holy Write we read that Moses gave to his people some sound advice for their protection against disease.

If the people of England never had the right before, certainly Magna Charter of 1215 granted them the protection of life, liberty and property.

In 1689 the Bill of Rights confirmed these rights under Magna Charta by Statutory Law.

*Presidential Address at the 128th Annual Meeting of the Medical and Chirurgical Faculty of Maryland, April 27, 1926.

In 1776 Thomas Jefferson in the Declaration of Independence wrote that *"We are entitled to life, liberty and the pursuit of happiness."*

In 1789 when the Constitution of the United States was adopted the Preamble said that *"We, the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquility, provide for the common defense, promote the* GENERAL WELFARE, *and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution of the United States of America."* Though our liberties seem to have been materially restricted, as yet, no one has attempted to restrict our GENERAL WELFARE."

In 1867, when our present Constitution of Maryland was adopted, it is therein specifically stated that, "The Bill of Rights," and known as the "Declaration of Rights," and all other English Statutes found applicable to our needs, were re-established by Statutory Law. In the 43rd Article of this same Constitution, it is specifically stated that, *"The Legislature ought to encourage the general amelioration of the condition of the people."*

In the Constitution of this Faculty we find in Article 11, among the purposes for which we are constituted is "To Enlighten and Direct Public Opinion, So That the Profession Shall Become More Capable and Honorable Within Itself and More Useful to the Public, in the Prevention and Cure of Disease and in Prolonging and Adding Comfort to Life."

Before it is possible to answer the next three questions of the above title, it will be necessary to give a short resume of its history and some of the facts concerning its activities.

When the present Director of Health assumed his duties as Secretary, now nearly thirty years (30) ago, there was a meagre office equipment and an expert needle worker. Today he is the Director of Health, has under his care and supervision eight bureaus and a personnel of 153 with several branch laboratories. For twenty-five years the deliberations of the Department have been guided by no less a distinguished person than our own Dr. Wm. H. Welch, and through these many years each Commissioner of Health for Baltimore City, our State Attorney Generals, Civil Engineers and other professional men of considerable ability have given liberally of their time, thought, consideration, advice and guidance until now, those who have some knowledge of conditions feel we stand second to none as a State Department of Health.

To better acquaint you with some of our activities permit me to show briefly what is being done.

Bureau of Chemistry

Upon the Bureau of Chemistry falls the task of making chemical, physical and microscopical examinations of foods (including potable waters), drugs, sewages and trade-wastes, and, in addition, samples representing the streams and navigable waters of the State. Such examinations may be made in the laboratory or in the field. In case violation of the law becomes apparent, members of the staff may be called upon to serve as witnesses in court. That the evidence furnished under such conditions may be satisfactory, it is of course necessary that the scientific work performed shall not be open to criticism; this means that the methods of analysis employed shall be such as have won the confidence of experts and have been approved by such bodies as the Pharmacopoeial Committee, the Association of Official Agricultural Chemists and the American Public Health Association.

The total number of samples subjected to analysis during the year 1924 was 4294. Of these nearly 1600 were classed as foods other than water, and there were about 64 different types of food-product in the list. Under the head of drugs (508 samples) there were examined 67 different types of product. Water samples to the number 2090 were analyzed from such various sources as wells, springs, streams and the Chesapeake Bay and its estuaries. Every county in the State, as well as Baltimore City, was represented in this total. Sewage and trade-waste samples numbered 80, and in the group labeled "Miscellaneous" there were over 40 samples.

It should be borne in mind that, because of the magnitude of the routine demand made upon its staff, it is practically impossible for the Bureau of Chemistry to set aside its proper task in order to undertake the examination of so-called "Private" samples. This restriction has at times given rise to complaint; yet a little reflection should convince any reasonable person that a limit must be put upon the work done at State expense for the individual—even if a taxpayer.

Bureau of Pure Foods and Drugs

The Federal Food and Drugs Act, popularly known as the Pure Food Law, prohibits the interstate shipment of adulterated and misbranded foods and drugs. This law does not give protection against the intrastate sale of such products. In order to protect the local public within the States, practically all Sates have a law duplicating in essential details the National Law.

The Food and Drug Department of Maryland enforces the Maryland Food and Drug Laws, Sanitary Inspection Law, cer-

tain sections of the Maryland Pharmacy Act and other miscellaneous laws. We have in Maryland large dairy, canning, shellfish, bottling and drug industries. The department keeps in constant touch with these industries with the object of seeing that the consumer secures pure foods and drugs and the purpose of aiding legitimate industries by preventing unfair trade advantages through the sale of adulterated and debased food and drugs. Contact is maintained with the large producing industries through factory inspection and investigations. These involve the study of raw material used, finished products and general sanitary conditions. During the last eleven months (11) approximately 1965 specimens of foods and 389 specimens of drugs were examined in the chemical laboratory. In an average year 85 per cent or better are found to pass all reasonable standards. This is a good showing when it is considered that in a great many cases samples are secured under the suspicion that they may be adulterated or mislabelled. In other words, there is a certain selection of samples based on some information that they may be found objectionable. Approximately 40 per cent of the foods examined represent dairy products (milk, ice cream, butter, etc.). About 20 per cent of the samples are canned foods, 10 per cent shellfish products, 15 per cent beverages and the balance represent the entire range of foods.

Approximately 6,500 inspections were made of various food and drug establishments. The annual condemnation of unsound and decomposed foods varies from 90 to 150 tons. This represents food actually in possession of the trade and does not include the ordinary perishables which rot in transit and which would be dumped at freight yards. Foods condemned ordinarily represent such products as canned goods, which may have decomposed as the result of faulty technique in canning, fish products, cereals which may have spoiled because of too long holding or unfavorable storage conditions, canned tomato products, such as pulp, which may have been put up from defective material and other canned foods which may either have been prepared from poor material or spoiled as the result of defective cans, etc.

From 20 to 35 tons of diseased meat is condemned annually. Undoubtedly more such meat would be found if adequate force was available for inspection of all the slaughtering in the State.

The Food and Drug Department is of assistance to the medical profession on the following lines:

1. As milk is recognized as an extremely important food for the young, effort is made to encourage various towns

and cities to provide a safe milk supply. This department examines in smaller towns and cities as frequently as possible. High bacterial counts are investigated and producers shown how to correct these, adulteration is corrected either by warning or prosecution. As it is not possible for the department to maintain complete supervision over the milk supplies of all towns and cities, these municipalities are urged to adopt a milk ordinance and to require tuberculin testing of cattle and limit the sale of milk to that which has been pasteurized or which comes from tuberculin tested herds. Milk ordinances are in force in Baltimore, Cumberland, Hagerstown, Easton, Salisbury, Frederick and Cambridge. It is but fair to state that the first two cities mentioned have provided for their own milk supervision without any urging by the State.

2. Through a large number of inspections a relatively small proportion of unsafe or deleterious foods are offered for sale. Whenever questionable food products are encountered they are seized and withdrawn from sale. Occasionally an epidemic of food poison occurs, such as so-called botulism and cases of enteritis. Whenever botulinus is found, as has been the case in such foods as canned olives, spinach, etc., cooperation is maintained with the Federal authorities. Every effort is made to locate any particular pack of a canner which may have been responsible for outbreaks. In some cases samples have been examined from all goods located and not released until found to be safe. In some cases the manufacturer has voluntarily withdrawn the product from the market.

3. A very earnest and determined effort is made to prevent the transmission of typhoid and other intestinal diseases by shellfish. Oyster houses are being certified and the oyster establishments are subject to frequent inspection, packers being required to handle their product in a sanitary manner.

4. The drug division of this Bureau is doing a great deal of work which results in benefit to the physicians. This is outlined as follows: Samples of drug products are collected for analysis from all sections of the State as a regular routine duty. This work includes manufacturing houses, wholesale druggists and retail pharmacists, and embraces a wide variety of preparations such as are prescribed by physicians as well as those which may be considered household products. The purpose of this work being to assure the public of drugs and medicines of proper purity and standard. The matter of proprietary medi-

cines also has received some study, as the Bureau has made some inquiry into the nature of the manufacturing plants as well as the educational fitness of those engaged.

The law regulating and controlling the conduct of retail drug stores and the practice of pharmacy also received much attention by this office, the purpose being to safeguard the dispensing of medicines and the compounding of physicians' prescriptions by confining such activities to those legally qualified. Retail drug stores are inspected throughout the year and results kept on what is called "Retail Pharmacy Inspection Record." When unqualified persons are found filling physicians' prescriptions prosecution invariably follows. This work has necessitated a complete survey of the retail drug stores in Maryland, and all information relative thereto is on file in the office. *State Poison Law*: (Section 288-291, 456-457, Article 27, Code of 1924.)

This law specifies certain drugs and chemicals as poisons and also prescribes the conditions under which they can be sold at retail, and the enforcement of this statute is one of the activities of this office. In this connection purchases are frequently made of poisonous substances to ascertain the extent to which the law is obeyed. A study of the cases of poisoning occurring in the State for the year 1924 was made, and much information bearing thereon is on file.

Bureau of Sanitary Engineering

It is impossible to give an idea of the activities of this Bureau for a year, consequently I have summed up the same since it was established in 1912. Since that date new water supply systems have been installed in Friendsville, Savage, East New Market, Dundalk, Perry Point and Leonardtown. More or less extensive additions or alterations have been made during this period to the existing systems at Brunswick, Braddock Heights, Frederick, Hagerstown, Cumberland, Hancock, Midland, Lonaconing, Boonsboro, Middletown, Frostburg, Walkersville, Westernport, Oakland, Union Bridge, Princess Anne, Pocomoke City, Denton, Emmitsburg, Westminster, Taneytown, Sparrows Point, Annapolis, Belair, Havre de Grace, Elkton, Perryville, Port Deposit, Centerville, Crisfield, Salisbury, Ocean City, Easton, St. Michaels, Cambridge, Chestertown, Ellicott City and Rockville. Improvements at these places have, in some instances, consisted of new sources of water supply; in others in installation of new or additional purification units, and extensions to the existing distributing systems.

Sewerage improvements have been made in Towson, Cumberland, Hancock, Frostburg, Westernport, Hagerstown, Dundalk, Sparrows Point, Midland, Easton, Salisbury, Chestertown, Cambridge, Annapolis, Port Deposit, Perry Point, Pocomoke City, Denton, Betterton, Tolchester Beach, Ridgely, Rockville, Savage, Elkton, Aberdeen and Crisfield. These improvements in many instances, consisted in the construction of sewage treatment works and in others, extensions to the existing systems of collecting sewers.

Some idea of the routine work of the Bureau may be obtained from the following data: From 1912 to 1926 the total number of inspections made by the Bureau was 13,288; water and sewerage samples collected by the Bureau during this period totaled 44,814; 682 water supply and 654 sewerage permits were issued and 5,732 plans were received for examination for approval and filing. Of this number 762 were received during 1925.

Complete figures are not available to indicate the total cost of work represented by plans received by the Bureau, but some idea of the magnitude of the routine work of the office in connection with the examination of plans submitted for approval may be obtained from the fact that, in 1924, the total value of the work represented by plans submitted for review amounted to approximately $2,012,300.

The activities of the Bureau have also been directed toward improvement of sanitary conditions confronting the department in certain areas by coordinated control. In Montgomery and Prince George's counties the first Metropolitan District in the State, known as the Washington Suburban Sanitary District, was authorized by the Legislature in 1918. The Washington Suburban Sanitary Commission, which has jurisdiction over the district for sanitary purposes, has control over an area of 95 square miles, with a present population of 40,000, and a taxable basis of approximately $45,000,000. In 1924, the Baltimore County Metropolitan District was organized by legislative enactment. This district includes a present population of 55,000 and embraces an area of 197 square miles. In both districts the commissions have control over the water supply, sewerage and storm water systems.

Another branch of the Bureau's activities is that at State institutions. Before the formation of the Bureau a number of State institutions were handicapped by inadequate or inefficient water systems and sewerage treatment plants. When authorized by the Governor the Bureau may prepare plans and supervise the construction of needed works. The total cost of im-

provements carried on in this manner at State institutions under the direction of the Bureau up to the present year, amounted to approximately $275,000. Improvements were made at the following institutions: Springfield State Hospital, Maryland House of Correction, Maryland Tuberculosis Sanatorium, University of Maryland, Crownsville State Hospital, Colored Tuberculosis Sanatorium, Maryland Training School for Boys, and the Maryland Tuberculosis Sanatorium, Mt. Wilson Branch.

There are a number of scattered communities in the State where the installation of water or sewerage systems or both, are essential to the protection of public health. In the majority of these towns the municipal authorities and the residents are more or less indifferent as to their needs. In such places it is necessary for the Bureau to do considerable educational work in the way of enlightening the people to the potential danger of allowing existing conditions to remain and of the small additional cost to each property owner for the installation of adequate service. In order that actual figures may be presented, the Bureau makes preliminary surveys and prepares plans and cost data for such systems, which is presented to the town officials and at public meetings to arouse interest in the project. When the residents realize that sanitary conveniences may be had at a very nominal cost, and enough enthusiasm for the installation of these systems is evident, the Bureau prepares tentative enabling acts for submission to the legislature providing for their installation. The plans prepared by the Bureau are of a preliminary nature only and are used for estimating purposes. The actual design of any system to be built is left to a consulting engineer who must be employed by the town to prepare contracts and plans and specifications to be submitted to the Bureau for approval.

A considerable amount of work has been done on special studies relative to stream pollution by industrial wastes. Investigations and studies have been made of the wastes from various industries, including tanneries, distilleries, creameries, canneries, acid manufacturing plants, gas, fertilizer and garbage reduction works.

In addition to the routine inspections made, the Bureau is constantly being called upon by individuals living in rural sections for assistance in solving their water supply and sewerage problems. In these cases the Bureau lends every effort to assist them in bringing about better living conditions to the individual.

Bureau of Child Hygiene

ACTIVITIES:

Midwifery Survey

The first piece of work undertaken by the Bureau after its organization was a survey of the midwifery conditions in the State. It has eliminated a large number of these midwives but it seems as though these necessary evils must continue. At this time special courses are being given to midwives in order that they may be more competent.

Field Work

The field work of the Bureau is done in cooperation with the Deputy State Health Officer, or Local Health Officer, with the assistance of the Local Public Health Nurse. Clinic physicians are sent on invitation from the Deputy State Health Office, or Local Health Officer, to conduct the child health conferences that have been organized in fifteen of the twenty-three counties.

Child Health Conferences

These conferences are held at regular intervals, usually about once a month, in different parts of the county. No medical treatments are given, but any child who needs such treatment to interest and secure the cooperation of the local physicians. A report is sent to each physician outlining the results of the examination of his patient.

Nearly 5000 babies and pre-school children (4986) were examined at the 279 conferences that were held during the year ending December 31, 1925.

Prenatal Advice

Prenatal advice is given when requested by the expectant mother or physician. Special effort is made to visit all newborn babies, especially those reported by midwives. Educational material in connection with these matters is freely distributed.

Exhibit Material

The Bureau has a small exhibit on infant care and infant feeding, the central feature of which is a demonstration layette and outfit. In addition, the exhibit includes a Model Health Center, and two life-size, four-year-old demonstration dolls.

Films and Movie Machines

The Bureau also has a moving-picture outfit with eighteen (18) films showing the various phases of health work in the interest of Child Welfare.

"Well Born." (Prenatal.)
"Out of the Everywhere."
"Saving of the Eyes of Youth."
"Milk."
"Our Children." (Showing the development of Baby Health Conferences.
"The Priceless Gift of Health."
"The Romance of the White Bottle." (Milk film.)
"The Error of Omission." (Birth registration film.)
"The Knowing Gnome."
"Bringing It Home." (Interesting story of Child Health Conference.)

The Brayco Projector With the Following Films

"Stung." (Mosquito film.)
"Transmission of Diseases." (T. B. film.)
"Old King Cole." (Nursery rhyme.)
"X-Ray on Teeth."
"Care of the Baby." (a) "Bathing."
(b) "Feeding."
(c) "Dressing the Baby."

All the above are available for use in the counties.

Portable Dental Outfits

The Bureau also owns two portable dental outfits. These are used in the dental conferences that have been held as following conferences in a number of the counties, with the cooperation of the State Dental Society.

Child Health Conferences on Wheels During the Summer

During the summer months a Healthmobile is placed in the field and visits nearly all the county fairs where Child Health Clinics are held for the benefit of mothers who wish to take advantage of them.

Bureau Contributes to Public Health Nursing Department

The Bureau has contributed to the Public Health Nursing Budget in Allegany, Anne Arundel, Calvert, Carroll, Frederick, Harford, Prince George, Somerset, Talbot, Washington, Worcester, St. Mary's, Cecil and Garrett counties.

EDUCATIONAL PUBLICITY (*Weekly Press Bulletin*)

The Division of Public Health Education of the Department sends a press bulletin on some phase of personal or community health, to the county papers in the State each week.

Vital Statistics

The advantages of the registration of vital statistics to the average citizen are so numerous and at the same time so evident that they need not be discussed. However, I think it only fair to call your attention to the fact that this important function of the State operates for the convenience and welfare of the families of the medical profession as well as that of the non-professional citizens.

What I want to present to this Association are a few facts that have to bear directly on the life and work of all of us, and how the State by maintaining the Bureau of Vital Statistics aids us in establishing scientific facts that are directly correlated with our own personal efforts to alleviate suffering and illness.

Until quite recently you depended for mortality rates from disease upon compilation of individual investigators, who for one reason or other, had to confine their studies to limited or specialized fields, with a result that compilations differed so materially that the results were nearly always confusing. There was no standard basis for rates and it was impossible to obtain data from racial or topographical groups which were complete enough to permit conclusive or unbiased deductions.

For a number of years the Bureau of Vital Statistics has been collecting accurately, statistics of every death within the State of Maryland. The data from these certificates are tabulated by machines, and it is possible to furnish to interested persons, facts regarding mortality from disease gathered from a group of nearly one-half million residents of the State.

The student of tuberculosis has now access to information which will permit him to state with precision the mortality from this disease. He can ascertain its racial prevalence, its age incidence, and the distribution of this mortality by sex. Every other cause of death included in the international classification of deaths is treated in the same manner.

By studying these rates, those of us interested in any one of them may by following them over a period of years, make observations which are a reliable index to the rise and fall in the prevalence of disease. It permits a charted observation sheet of what is actually causing mortality, and aids in keeping us oriented in an everchanging picture.

Furthermore, what is done in this State is part of the project of the Bureau of Census to obtain similar information for the entire United States, and at this time by combining the information gathered in a number of States, we are enabled to secure accurately rates from 80 per cent of the population of the Nation. This tabulated information is furnished the internist, the surgeon, the neurologist, or any interested physician, upon request, and is the basis for a great part of the medical work which we are actually engaged in at this time.

The registration of births is equally important and offers the physician himself a number of outstanding advantages, which he should and will make use of more frequently with each succeeding year. By law, each certificate of birth is maintained as permanent legal record. The information on the certificate is not released except for proper purposes, and frequently only upon a court order. There is a penalty provided by law for the release of a certified copy of a certification of birth or death for improper purposes. The release of information on certificates of birth can be accompanied by considerable hazard to us as individuals, but the State, through the Bureau of Vital Statistics, assumes this hazard if the certificate is properly registered and at this time when legal proceedings are so easily instituted, it is a good practice to have the State issue all copies of records for us.

Based upon investigation of medical men, school authorities have found it advantageous to the educational system to have students in the public schools begin attendance at uniform ages and for that purpose have made regulations which necessitate proof of age upon entering school. To promote the convenience of parents, and to relieve us of making copies of our records at each school term, the Bureau of Vital Statistics sends the parents of all children whose births are registered a notification card stating that the birth has been properly registered, along with other items of identification. This card bears the seal of the State Department of Health and its first purpose is to establish age upon entering school. Each year, thirty-five or thirty-six thousand of these cards are forwarded to parents.

The registration law makes a certified copy of a certificate of birth prima facie evidence in all courts and each time a copy of a certificate is requested for court purposes, one of us is probably saved a court summons. If, for any reason the copy is not admitted, the physician is very seldom summoned; instead the Registrar of Vital Statistics receives a summons to produce the original record. During the past year, 9,562 certified copies of records were issued in this State, a fair percentage of them for evidence in court.

Not all of us have the facilities for keeping records from loss by fire and other causes over a long period of years. The Bureau of Vital Statistics performs the function of custodian of the records for us and we may at any time, upon application, obtain a copy of any record of which we have need.

We receive over 99 per cent of deaths and 97 per cent of births. I am quite sure our neighboring State has not such an excellent record.

Bureau of Bacteriology

At one time there was but one laboratory situated in Baltimore, but for the convenience of physicians there has been established five branch laboratories situated in:

Branch No. 1—Cumberland—One assistant bacteriologist.
Branch No. 2—Hagerstown—One assistant bacteriologist.
Branch No. 3—Hurlock—Two assistant bacteriologists.
Branch No. 4—Frederick—One part-time assistant bacteriologist.
Branch No. 5—Washington, D. C.—One assistant bacteriologist.

Special examinations were as follows:

Number of Wassermann examinations (blood)	9674
" " " " (spinal fluid)	120
" " " " (Colloidal Gold)	77
" " Malaria "	96
" " Widals, Incl. Typ. "A" and "B"	7575
" " Feces & Urine " " " "	1965
" " Blood Cultures " " " "	171
" " Diphtheria cultures	12822
" " Animals for Rabies	114
" " Water samples	5367
" " Milk samples	4843
" " Various food products	320
" " Oyster examinations	870
" " Tuberculosis examinations	927
" " Gonorrhea examinations	4097
" " Miscellaneous examinations	3175
Total number of examinations in all laboratories	52228

By special arrangements, during 1925, 49,381 doses of diphtheria antitoxin, toxin-antitoxin, tetanus antitoxin, typhoid and smallpox vaccine were distributed at a cost of $4,781.25 which would ordinarily have cost $27,457.05, or a saving to the beneficiaries of $22,675.80.

Patients when unable to pay are given pasteur treatment free of charge and when able to pay, at a cost of $20.00.

Bureau of Communicable Diseases

TUBERCULOSIS — The Maryland Tuberculosis Association working in conjunction with the Department during the year 1925 held 232 clinics in fifty-nine communities of twenty-one counties. Two thousand five hundred and ninety-seven were examined, the number of physicians cooperating were 400, who referred 95 per cent of the cases to the clinics. Eleven per cent of all the cases entering State Sanatoria during the last fiscal year were diagnosed in these clinics.

VENERAL DISEASES—The deaths from veneral diseases just about equaled the total from typhoid fever, whooping cough, and diphtheria in 1924. Clinics are held regularly for the cure of this disease in Baltimore City, Cumberland, Hagerstown, Annapolis, Easton, Cambridge and Salisbury. Physicians in other sections of State are furnished treatments free.

TYPHOID FEVER—When in the winter of 1924 and 1925 the outbreak of typhoid fever occurred in the City of Chicago, the source of infection was traced to oysters. Maryland being a large shipper of this sea food to all parts of the country, was immediately placed under suspicion and for the time this commodity was barred and temporarily threw the oyster industry in a chaotic state. It was immediately shown, however, from the records of this Bureau that an epidemiological investigation had been made in every case of typhoid fever within the State and in no instance was oysters shown to be the source of infection. It was not long, therefore, before other States and the United States Public Health Service accepted our knowledge as to these facts. Complete records are kept of all the communicable diseases reported, and in every instance where possible special investigations are made.

DIPHTHERIA—Every case of diphtheria reported, particularly in schools, receives prompt investigation and every effort is made to check the disease. Schools formerly closed on account of diphtheria are now kept open at a great economic saving. Every case reported is within four hours of free antitoxin. A large demonstration of the value of toxin-antitoxin has recently been made in orphan asylums, State Institutions for Insane and many of the public schools.

SMALLPOX—When a case of smallpox is reported it is immediately seen by the Health Officer and we are not satisfied until every contact is known and either vaccinated or isolated. All of the diseases are given as much consideration as is their due at the earliest possible moment.

PUBLIC HEALTH NURSING SERVICE

If I had the time and you had the patience I would like to give you an idea of the work done by the various Public Health Nurses throughout the State in the control of communicable diseases working through this Bureau. Suffice it to say that the results accomplished by the Public Health Nurse is of inestimable value to the State.

What of the Future?

It is a well recognized fact by every Department of Health that whatever has been accomplished has been due to the cooperation of the physicians—with you we can accomplish much, without you we are powerless—we ask your continued assistance, for certainly our State would not allow to lapse what has already been accomplished. We are well within the zone of safety when we state that in dollars and cents we have saved more than it has cost; in the reduction of deaths from typhoid and diphtheria alone not to mention the tremendous economic saving in keeping the public schools open when disease is present, for only up until comparatively recent years they were closed on the slightest provocation; in the saving of the oyster industry and in many other fields too numerous to mention.

STATE MEDICINE—A phobia. I can safely say that there is not now and never has been any one connected with the Department who is in favor of State medicine. If it ever comes, it will not be by our initiative, for every effort is directed against it. It will be forced on us.

Other problems will be met as they arise.

Prophesying is *dangerous.*

THE IMPORTANCE OF EXAMINATIONS OF THE EYEGROUNDS IN INTERNAL DISEASES*

By HARRY FRIEDENWALD, M.D.

The study of the vascular system has long been engaging the attention of clinicians with ever-increasing interest. Nowhere in the body can certain phases of this study be pursued under such favorable conditions as in the retina; with the ophthalmoscope we see the retinal vessels, as it were, exposed, for all the overlying tissues are commonly quite transparent;

*Remarks made at a meeting of the Medical and Surgical Staff of the University Hospital, April 10, 1926.

indeed, these overlying tissues form a system of magnifying lenses which enable us to see the retinal vessels under a magnification of about fourteen diameters, so that we can study not only the large retinal arteries and veins, but their branches down to the finest arterioles and venules, under certain conditions even the capillaries. It is well to bear in mind that we do not see the walls of the retinal blood vessels in conditions of health, for the vessel walls, like many other tissues within the eye, are quite transparent; what we see, therefore, is not the wall, but the circulating blood contained within the vessel. Examination enables us to recognize congestion and ischaemia, cyanosis, and pallor of the blood in marked conditions of anemia. It also enables us to discover changes in the vessel walls; when, as frequently occurs in angiosclerosis, there are localized thickenings of the walls encroaching on the caliber of the vessel, the condition is recognized by the distinct constrictions of the blood column, situated between wider portions of the vessel, though the thickened vessel walls commonly retain their transparency. When the thickening of the walls has become extensive and uniform, we find markedly attenuated vessels. At times the diseased vessel walls lose their transparency and they appear white; when this change is slight the blood column appears as though it had a whitish margin on either side; when it is marked the vessel appears as a white band, completely hiding the blood it may contain; the fact that it may still be patulous is evidenced by following the vessel and finding that at a distance the vessel walls may again be transparent and contain the circulating blood.

Study of the diseased blood vessels discloses a great variety of conditions. We see how the hardened arteries press upon the veins, indent them, compress them, cause their congestion and tortuosity, and lead to hemorrhages and to the formation of thrombi—and these processes are observed in the retina in vivo!

We are familiar with the appearance of hemorrhages and of the white and gray spots which produce the great variety of retinal pictures that are described under the various forms of retinitis. The retinal hemorrhages in most cases are associated with distinct evidences of vascular disease. In other cases they are probably caused by changes in the composition of the blood as in marked anaemias and leukaemias. These hemorrhages may become entirely absorbed and disappear, or they may lead to changes in the neighboring retinal tissue, which, on ophthalmoscopic examination, appear as gray or white spots or plaques, and which are due to inflammatory or degenerative changes or to lipoid deposits which in some way they provoke.

White and gray spots and plaques in the retina are probably, in large measure due to nutritive disturbances consequent upon disease of the nutrient vessels. When the central retinal artery, or one of its large branches, becomes occluded by an embolus or by a thrombus, it produces an infarct: an oedema of the portions of the retina supplied by the obstructed vessel makes its appearance, presenting the well-known whitness of the eye-ground with the cherry spot in the macula. Some of the white and gray spots seen in the cases of arteriosclerotic retinitis are similarly produced by closure of finer arterioles. While it is difficult to correlate all of the lesions seen in retinitis with the histo-pathological changes, it is increasingly evident that the latter are generally dependent upon the vascular lesions, directly by sudden or gradual nutritional disturbances as just suggested, or indirectly through the hemorrhages produced. But it is probable that other factors also play a part. Thus, for example:

Miss W., aged 39, was under the care of Dr. Pincoffs in December, 1921. The diagnosis was chronic parenchymatous nephritis (low pressure nephrosis), chronic myocardial weakness, secondary anemia and oedema. Her blood pressure was low, 100/85, but two months later it rose above 200 for a short time. She complained of spots before the eyes. Her sight became very bad; when I first saw her, she was almost blind and presented a marked neuroretinitis with marked edema of the disc. Under continued treatment her condition improved greatly, though in July the urine still showed a low specific gravity, a heavy trace of albumin, 0.6% sugar, many W. B. C., a few R. B. C., and was loaded with hyalin, granular and waxy casts. I saw her again on April 12, 1923, when her vision in each eye was 20/24. The discs showed slight blurring of outline. The blood vessels presented normal appearances. The macular region contained numerous fine whitish spots, some conglomerate and containing brilliant crystals. There were also some pigment disturbances under the retina. In November, 1923, she had made still further progress, and I examined her with the binocular Gullstrand ophthalmoscope, which showed that there was still very definite protrusion of the discs. In 1925 she was seen and the fundi showed only the fine, glistening dots which were the vestiges of the former retinitis. About this time she developed acute hyperthyroidism, and was operated upon by Dr. Shipley, with apparently good result. In December the vision of both eyes was almost perfect. No further change in the eye grounds. The patient was last seen in April, 1926, is at work and feels well. Her urine has a trace of albumin, but no casts.

In this case the patient made a gradual recovery from her nephritis, and with it the retinal lesions cleared up and finally disappeared, and there was restoration of good vision. The inference is inescapable that the cause of the retinal lesions must have been the toxic condition.

I have just mentioned edema of the optic disc; this is commonly called choked disc and is indicative of increased intracranial pressure. In nephritic retinitis we not infrequently find more or less marked œdema of the nerve head, with venous engorgement of the retina and with prominence of the disc. This condition in cases of cardiovascular and nephritic disease points to marked cerebral edema, with resulting increase of the intracranial pressure; these are the patients whose headaches are often very severe and who not infrequently complain of frequent obscuration of vision—when "everything becomes dark before the eyes," just as in the case of cerebral tumor.

I have called your attention to the significance of these varied retinal findings, because, first, they help us to recognize general vascular disturbances, and, secondly, because they have a special bearing on the diagnoses of cerebral disease. The retinal arteries, like the cerebral arteries, are terminal—indeed, the retinal vessels belong to the same division, are a part of the cerebral system. The changes which we see in the retinal vessels are a guide in interpreting the changes in the cerebral vessels which during life we can only surmise. A clever Frenchman, Bouchut, published an ophthalmoscopic work,* which he entitled "Cerebroscopy," and thus emphasized facts which are being recognized more and more as we observe and study retinal lesions and their correlated cerebral lesions.

We have recently had patients in this hospital who show the clinical significance of this subject. I shall report briefly on two of them:

Mrs. S., aged 54, was seen on February 4, 1926, complaining of disturbance of the vision of her right eye which had come on suddenly a week previously. Her vision in the left eye was perfect; in the right eye it was 20/60. She was a seamstress and was at work up to the time when I saw her. She did not complain of any other illness or discomfort. An ophthalmoscopic examination showed much blurring of the right optic disc, great congestion and tortuosity of the retinal veins, due to extremely marked arteriovenous compression. Even the smallest venules were very prominent and masses of capillaries were distinctly seen. The eye ground was studded with hemor-

* Atlas d'Ophthalmoscopie Medicale et de Cerebroscopie, Paris, 1876.

rhages. The retinal arteries presented many marked variations in calibre, with frequent constrictions. The left eye likewise showed marked variations in the calibre of the arteries with moderate arteriovenous compression. One of the smaller branches of the superior nasal vein presented the picture of a thrombosis. The patient was admitted into the University Hospital in Dr. Pincoffs' service. On entrance her blood pressure was found to be 250/130. There were no cardiac murmurs and the urine only occasionally showed a trace of albumin; there were no casts: the specific gravity varied between 1012 and 1018. Dr. Pincoffs' impression was: Essential hypertension with cardiac hypertrophy, well compensated; arteriosclerosis; good renal function. Under treatment the patient's blood pressure was reduced to 200/120.

In this case, as will be noted, the patient had no complaint to lead her to seek medical advice, excepting the visual disturbance; the retinal findings made the diagnosis of marked arteriosclerosis very clear and led to the treatment of this underlying affection.

The next case is of still greater interest. M. H., male, aged 41, a shipping clerk, applied February 5, 1926, at the University Hospital Dispensary on account of visual disturbance. He had previously consulted the Medical Department for attacks of shortness of breath which had begun in 1914, and which he attributed to working in an acid factory. He was sent in 1917 to Cuba and there suffered no asthmatic attacks. In 1918, on his return to his old work in the acid factory, the attacks recurred, and continued until he gave up the work in 1920. Since then the attacks had been lessening in number and severity, but were still troublesome. He was advised to avoid chemical fumes and his sensitivity for various pollens was examined. On February 10, 1926, he was again referred to the Medical Department, and it was learned that on the previous December the patient had fallen in a condition of unconsciousness and had had weakness of the left arm and leg. He had entered another hospital and had rapidly recovered so that at this time, two months later, the arm and leg are fairly strong, though there was still some weakness of the left side of the face. The Wassermann examination was reported as negative. There was no hypertension (140/90). The ophthalmoscopic examination showed right eye media clear; nerve head fairly well defined. In the inferior temporal region an area of circumscribed hemorrhages was noted. Below the macular region there was an area of white plaques.

The left eye presented areas of slight edema and there was marked venous congestion, but no hemorrhages or areas of retinal degeneration. Both retinæ showed marked arteriosclerotic changes. The diagnosis was arteriosclerotic retinitis.

A week later, at a second examination, it was found that the vision was R E 20/120, L E 20/60, and there were now hemorrhages in the left fundus as well as in the right. The patient was urged to enter the hospital for study and treatment, and was admitted on March 3, 1926. He entered in apparently good general condition, but within a few hours his breathing became stertorous and he was found unconscious. There were no convulsions. His blood pressure at that time was 192/140. He soon seemed to be regaining consciousness and showed weakness of his left upper and lower extremeties, but then again went into coma and died on March 7th. The post-mortem examination gave the following diagnosis: Generalized arteriosclerosis; syphilitic mesaortitis; thickening of the mitral and aortic valves; marked hypertrophy of the left heart; marked chronic diffuse nephritis; subdural hemorrhage over the entire right side of the brain; broad band of adhesions between the caecum and the transverse colon; terminal lobular pneumonia; chronic prostatitis.

In this case we see the valuable evidence which the retinal condition gives of grave vascular lesions in the brain. This, it is true, was indicated by the previous hemiplegia, but the patient had recovered so speedily and was otherwise feeling so well that it was only because of the eye condition that the gravity of his affection was recognized.

In concluding, may I sum up what I have endeavored to bring to your attention: The study on the part of the student and the practitioner of medicine of the changes that are to be found in the retina in various diseases not only helps in the recognition of many organic and systemic diseases, but also in understanding them more clearly and in getting a better insight into their pathology.

RECENT DEVELOPMENTS IN BLOOD CHEMISTRY *

By E. G. SCHMIDT, Ph.D.

INTRODUCTION

In 1790 Lavoisier concluded his last scientific communication to the Académie with these words: "up to the present time we have learned only to conjecture as to the cause of a great number of diseases and to the means of their cure. Before hazarding a theory we propose to multiply our observations, to investigate the phenomena of digestion and to analyze the blood in health and disease."

However, little progress was made until the last fifteen years when a remarkable advance took place in the study of the application of the chemical composition of the blood to clinical medicine. Chemical analysis of the blood as an intergral part of the routine clinical examination in certain diseases only became possible with the development of the micro-methods of analysis, that is, methods by which very minute amounts of substances could be accurately and rapidly estimated.[1] It is interesting to note that this new application of chemistry is primarily the result of American observations with American methods, and we are especially indebted to O. Folin, S. R. Benedict, and D. D. Van Slyke for the development of the methods which have made this work possible. While technical assistants, under the direction of competent biochemists, can handle many of these methods, individuals without sufficient chemical training can hardly be expected to secure entirely trustworthy results. Naturally a physician cannot expect his office girl or nurse to manipulate these methods without an appreciation of the chemical factors involved.[2]

The literature of this subject is scattered through a considerable number of periodicals, many of which are not readily available to the practitioner. As some knowledge of the main facts of the subject is becoming more and more essential in medical practice, this short article has been written in order to review the more recent developments in the application of blood chemistry to medicine.

It is quite essential that specimens be secured under as uniform conditions as possible. Satisfactory conditions are obtained by taking the blood in the morning before breakfast, i. e., after a 12 to 14 hour fast. The question frequently arises, how long can a specimen of blood be kept without vitiating the

* From the Biochemical Laboratory of Mercy Hospital, and the Department of Biological Chemistry, University of Maryland, School of Medicine.

results of the analysis. The analysis should preferably be made at once as the glycolytic blood ferments will materially reduce the amount of blood sugar within a few hours. The determination of creatinine should be made as soon as possible while the specimen, if properly refrigerated, can be saved several days for the determination of urea, non-protein nitrogen, and uric acid. In case a specimen must be sent by mail sterile containers, various forms of vacuum tubes, etc., should not be relied upon without the addition of a proper preservative. Formaldehyde, being a reducing body itself, should not be used. The addition of a few crystals of sodium fluoride or thymol has been found to act as a satisfactory preservative, and does not interfere with the subsequent analysis.

The blood, like all tissues, contains proteins which are of little significance at present either in pure biochemical studies or in clinical diagnosis, and are consequently rejected before the various determinations are made.[3] After removal of the proteins of the blood or plasma by various precipitants, the different analyses are then made on the protein-free filtrate. The water soluble constituents of this filtrate of chief interest are urea, creatinine and uric acid, which constitute the most important fraction of what is known as the non-protein nitrogen, and the sugar.

Blood Sugar in Health and Disease

In 1775 it was first recognized by Dobson that blood may contain a sugar-like substance, but it was not until seventy years later that its presence in normal blood was discovered by Claude Bernard.[2] However, it remained for Lewis and Benedict to introduce a colorimetric method for blood sugar estimation so simple that it could be employed for clinical as well as scientific purposes.[4]

It should be recognized, however, that the exact amount of glucose in blood cannot be readily determined, as the blood also contains other reducing, but non-fermentable, substances besides glucose. The nature of this reducing non-fermentable residue occurring in blood is not definitely known. By inducing insulin shock Van Slyke succeeded in reducing the fermentable sugar to zero in two out of six rabbits without effecting the non-fermentable reducing substance.[5] Workers in this field have long appreciated the fact that the present colorimetric methods for blood sugar yield results which are too high. Benedict,[6] in his new method for blood sugar, secures materially lower results—70 to 90 mgs. per 100 cc. of blood, and Folin[7] has recently modified his older Folin-Wu[8] method for blood sugar, which is at present used in most hospital lab-

oratories, so that he also secures lower results. However, Folin's new modification is somewhat too complicated for routine hospital work, and it seems that Benedict's new method, or some similar method for blood sugar, will soon be adopted in most laboratories.

The variations of the blood sugar in the healthy individual and in pathological conditions may be conveniently considered together. The blood sugar may be abnormally high (hyperglycemia), or low (hypoglycemia), but these terms are relative and should be interpreted in the light of the metabolic condition of the patient. In health and after a night's fast the concentration of the blood sugar lies between 70 and 120 mgs. per 100 cc. of blood, depending somewhat upon the method used for analysis.

In appreciating the significance of a single blood sugar determination on a patient suspected of having diabetes, the patient's metabolic condition must be taken into consideration. Although a blood sugar of 150 mgs. is definitely abnormal and 200 mgs. per 100 cc. of blood is conclusive evidence of impaired carbohydrate metabolism, yet the blood sugar can, even in diabetes, be reduced to a practically normal level by a restricted diet or by fasting.

The ingestion of glucose, 1.75 grams per kilogram of body weight and on a fasting stomach, is followed by a characteristic sequence of events in regard to the sugar content of the blood, and when these changes are plotted we have what is known as a "blood sugar curve." This experiment is called the "glucose tolerance test," and in Figure I the "blood sugar curve" of a normal individual is shown. Immediately after the ingestion of glucose the sugar content of the blood begins to rise—the apex of the curve, varying from 150 to 180 mgs. per 100 cc. of blood, being usually reached in thirty to forty minutes. From this peak a steady and rapid fall sets in, and by the end of the second hour the blood sugar has regained its original, or more frequently a somewhat lower level.

In cases in which uncertainty exists as to the significance of sugar in urine, a defect in the carbohydrate tolerance can frequently be detected by plotting a blood sugar curve after a test dose of glucose. As shown in Figure I, the curve of pronounced diabetes is abnormal in two respects: the initial rise is unduly prolonged and the blood sugar content rises to a figure higher than that usually met with, and, secondly, the return of the blood sugar to the original level is very slow—the total duration of the hyperglycemia being much greater than in the healthy individual. In looking for evidence of defective carbohydrate metabolism in patients suspected of having mild or

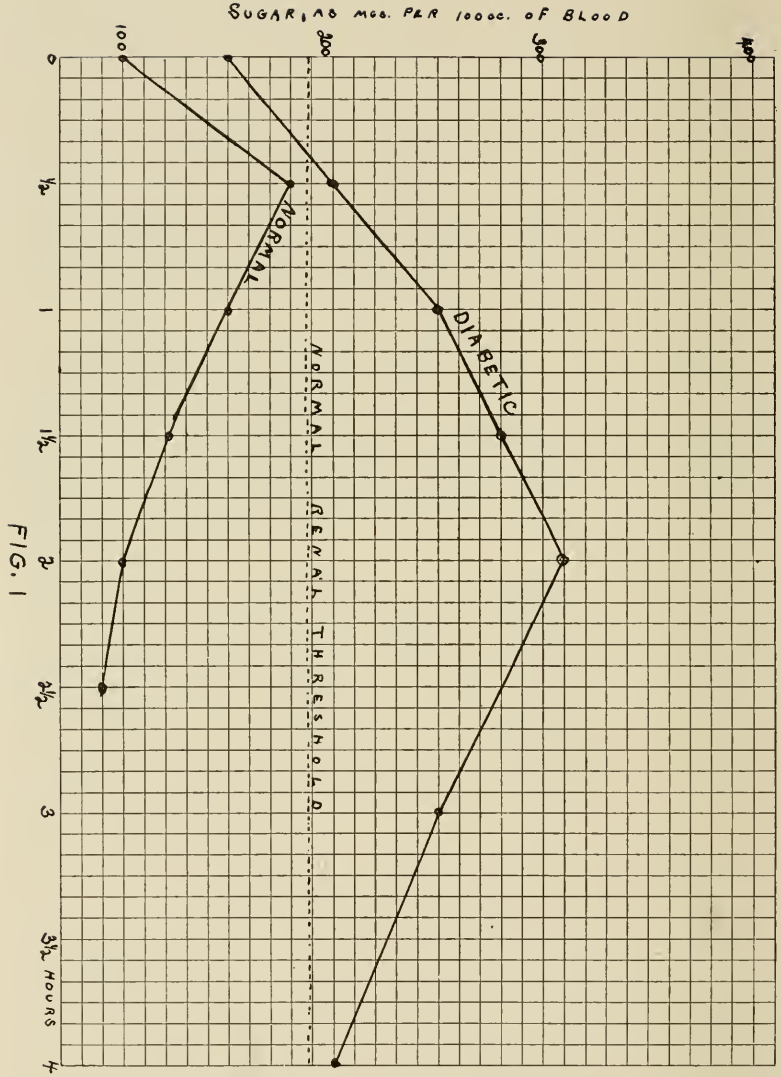
SUGAR, MG. PER 100 CC. OF BLOOD
100
200
300
400
0
½
1
1½
2
2½
3
3½ HOURS
4
NORMAL
DIABETIC
NORMAL RENAL THRESHOLD

FIG. 1

potential diabetes, attention must, therefore, be directed to two points—the actual height of the curve, and the duration of the hyperglycemia. In arriving at a conclusion, the general form of the curve, and especially its descending portion, must be considered and compared to a standard. A persistence of a rise in the blood sugar two hours after the dose of glucose, especially when combined with an abnormally high apex, should be regarded with suspicion. Frequently it is difficult to decide whether or not a slight defect is present in carbohydrate metabolism, and in such cases the glucose tolerance curve is of doubtful value. However, the test is of considerable aid in the detection of renal diabetes—a form of glycosuria in which the renal threshold is lowered to a variable extent. In such cases there is an excretion of sugar in the urine that is relatively independent of diet, and occurs in an apparently healthy person whose blood is found to contain a normal percentage of sugar no matter when it is examined.

The Acid-Base Equilibrium in the Body

The reaction of the blood is slightly on the alkaline side of the neutral point, and the extreme range of reaction is exceedingly small. The bicarbonate plays the most important part in the buffering of the plasma, and is, therefore, regarded as constituting the alkaline reserve of the plasma. Fortunately the alkaline reserve can be easily determined with the Van Slyke carbon dioxide apparatus. The determination of the plasma bicarbonate by this method is usually reported in terms of the carbon dioxide combining power of the plasma. Normally the combining power varies from 50 to 75 cc. of carbon dioxide per 100 cc. of plasma—being slightly lower in children.

When an excessive production of acids occurs, the alkaline reserve is depleted and an acidosis results. This condition is most frequently met with in diabetes, and is caused by the action of diacetic, B-oxybutyric, and probably other organic acids. The depletion of the alkaline reserve of the plasma in diabetes usually varies with the duration and severity of the ketosis. According to Van Slyke, definite symptoms due to acidosis appear when the carbon dioxide combining power falls below 30 cc., and in terminal stages in comatose patients figures as low as 10 cc. of carbon dioxide per 100 cc. of plasma are not infrequently found. Under insulin treatment the carbon dioxide combining power of the plasma returns to normal. The action of insulin increases the oxidation of the carbohydrates, and results in adequate and complete oxidation of the fat, and consequently cuts off the supply of the ketone bodies at their source. In advanced stages of nephritis an accumula-

tion of phosphate and sulfate acid radicles occurs and an acidosis results. The nine various types of acidosis postulated by Van Slyke[9] and demonstrated in hospital cases by Meyers[10] cannot be considered in this short review.

Instead of a depletion of the alkaline reserve, an accumulation may take place, and alkalosis is the term that has been employed to cover conditions which are associated with a shifting of the acid-base balance of the blood from the normal definitely to the alkaline side. Observations by a number of workers has shown that alkalosis is a condition that is much more common than has ordinarily been supposed and has frequently been overlooked. Alkalosis[11] is most frequently met with in cases of sodium bicarbonate over-dosage as sometimes seen in the treatment of peptic ulcer by alkali; certain types of persistent and excessive vomiting with a resultant loss of hydrochloric acid from the stomach, and in some toxemias due to obstruction high in the intestine or about the pyloris. In these cases tetany frequently occurs. Under these conditions of alkalosis the carbon dioxide combining power of the plasma sometimes rises as high as 130 cc. of carbon dioxide per 100 cc. of plasma, and is usually associated with low blood chlorides and a high blood urea.

The Non-protein Nitrogen Fraction in Health and Disease

After removal of the proteins of the blood, a residual quantity of nitrogen remains, which is usually described as "non-protein nitrogen," and, apart from the indeterminate fraction, is composed of urea, uric acid, creatinine, ammonia and amino acids—the last two constituents having no especial clinical importance. From the quantity of these bodies important conclusions can be drawn as to the efficiency of the renal organs.

Urea is the chief end product of nitrogenous metabolism, and constitutes in health from 35 to 55 per cent of the total non-protein nitrogen of the blood. Folin[12] gives a urea content of 25 mgs. per 100 cc. of blood with extreme variations of 19 to 32 mgs. for the blood of healthy individuals after a night's fast. Undoubtedly wider variations than those recorded by Folin occur in hospital cases, even with intact renal function. De Wesselow believes that in clinical work it is advisable to regard any blood urea over 40 mgs. per 100 cc. of blood as definitely abnormal, since diets which are capable of raising the blood urea above this figure, in the absence of renal impairment, are very uncommon. A blood urea much below 20 mgs. should be regarded merely as a sign of low nitrogenous metabolism, and in no way indicative of disease. In some laboratories the total non-protein nitrogen is estimated routinely instead

of the blood urea, and the normal figures given for this determination vary from 25 to 35 mgs. per 100 cc. of blood. It is generally agreed, at present, that the determination of blood urea yields the same clinical information as the determination of the non-protein nitrogen, and that the determination of both on the same specimen is quite unnecessary. Many laboratories report both urea and urea nitrogen. This does not mean separate determinations, but merely a mathematical calculation, as the urea nitrogen is roughly one-half (46.7 per cent) of the figure given for the blood urea.

Creatinine is the most constant of the nitrogenous constituents of the blood, and varies from 1 to 2 mgs. per 100 cc. of blood. A high creatinine is rarely, if ever, found associated with a normal urea, and hence the routine determination of creatinine, or the substance measured as creatinine for its actual presence in blood is still disputed, is quite unnecessary. In regard to uric acid, Folin and Denis[13] found that the normal uric acid content of human blood varied from 0.7 to 3.7 mgs. per 100 cc. of blood, with an average of 2 to 3 mgs. The diagnostic significance of uric acid under various conditions is still in dispute. In Table I is given the normal values of the blood constituents of chief interest to the clinician.

TABLE I

THE CONSTITUENTS OF NORMAL BLOOD

CONSTITUENT	FLUID	MGS. PER 100 CC.
Sugar	Whole blood	70 to 120
Urea	" "	19 to 35
Non-protein nitrogen	" "	25 to 35
Creatinine	" "	1 to 2
Uric acid	" "	2 to 3
Chlorides (NaCl)	" "	470 to 520
" "	Plasma	570 to 620
Bilirubin	Serum	0.1 to 2
Calcium	"	9 to 11
Phosphorous (infants)	"	4.5 to 6
" (adults)	"	2.5 to 4
CO_2 combining power	Plasma	50 to 75 cc.

In case the renal functions are grossly interferred with, a knowledge of the urea or non-protein nitrogen content of the blood is of great value. However, it should be appreciated that the test gives little indication of kidney defect in subacute and chronic cases of Bright's disease until the greater part of the

renal tissue is out of action. Animal experiments have shown that three-quarters or so of the total kidney substance may be removed before any accumulation of urea or non-protein nitrogen is found in the blood. However, increase in the non-protein nitrogen constituents of the blood is by no means the only change observed in cases of severe renal impairment. The phosphate and sulfate content of the blood increases, and in advanced stages of the disease the inorganic phosphorous may reach a figure of 20 to 30 mgs. per 100 cc. of plasma, as compared to a normal value of 3 mgs. This accumulation of inorganic acid radicals in the blood produces a marked reduction of the plasma bicarbonate and an acidosis results. Also, an increased concentration of blood sugar has been observed in this condition, the significance of which is still uncertain. That this increased reduction of nephritic blood is due to fermentable glucose has recently been established by Van Slyke.[5]

In any discussion of prognosis De Wesselow says "it is obvious that the type of lesion present must be taken into account in considering the significance of the blood findings. A degree of nitrogenous retention, which in a chronic and presumably progressive renal lesion indicates a hopeless prognosis, need excite no great alarm in a case of acute nephritis. More especially is this true of acute nephritis in children, since in childhood the capacity for repair is great. It is, therefore, of great importance to determine the form of the disease by a consideration of the patient's history and by physical examination, as well as other laboratory tests."

Although a degree of urea retention of 400 mgs. per 100 cc. of blood usually portends a fatal termination, except in very acute cases, death is not infrequent in patients in whom the highest level of blood urea noted has been below 200 mgs. per 100 cc. of blood. Substantial evidence exists that the toxicity of ureau is relatively low, and that death in uremia is not due to the accumulation of urea. Hence, the blood urea may be regarded merely as an index to the extent to which the renal function is impaired.

While the production of urea may show wide fluctuations, creatinine excretion tends to remain at a constant level. In over a thousand hospital specimens examined in the biochemical laboratories of Mercy and University Hospitals, practically no indication of creatinine retention was observed until the blood urea had increased to approximately 75 mgs. per 100 cc. or over. Creatinine is the most easily excreted of the nitrogenous waste substances, and hence an accumulation of creatinine in the blood should indicate very severe renal damage.

Therefore, it is not surprising that the creatinine content of the blood has acquired a considerable reputation as a guide to prognosis in nephritis. Meyers and Lough[14] state that a creatinine[15] content exceeding 5 mgs. per 100 cc. of blood indicates the presence of such severe renal impairment that death may be expected within a few months.[16] Feinblatt,[17] in a series of 1,500 unselected hospital cases, found 43 cases in which the blood creatinine exceeded 2.5 mgs. per 100 cc. of blood. Every one of these patients showed other evidence of renal damage. Of fourteen cases in which the creatinine reached a figure of 10 mgs., all died within three weeks; of fifteen patients with a blood creatinine between 5 and 10 mgs., eleven died within seventeen days, and three others died within the year. Such findings are typical of the significance of creatinine retention as recorded in the literature, and there can be no doubt that the creatinine content of the blood has a very high prognostic value.[18]

The Van den Bergh Reaction for Serum Pigments

During the last few years the Van den Bergh[19] reaction for serum bilirubin has come into considerable importance since the presence of any appreciable quantity of this pigment in the blood indicates a disturbance of the metabolism of bile pigment. Though the presence of a marked excess of bilirubin in the blood is accompanied by the development of jaundice, it is now generally recognized that the color of the skin is not a reliable index of the quantity of the pigment present in the circulating fluids. The delicacy of this test is very considerable, since it is capable of detecting one part of bilirubin dissolved in 1,500,000 parts of alcohol. All normal serum contains a trace of bilirubin—from 0.1 to occasionally 2 mgs., although usually less than 0.5 mgs. bilirubin per 100 cc. of serum.

In addition, certain variations in the reaction are met with, which are believed by Van den Bergh and others to possess a diagnostic significance. Upon the addition of the diazo-reagent to serum, the color reaction may appear at once, and reach its maximum intensity in less than one minute. This type of reaction is known as the "prompt direct." In the "delayed direct" reaction, the color appears only after a considerable interval, an interval which may amount to fifteen minutes or even longer. A "biphasic direct" reaction is also described, in which instead of the violet color of the prompt reaction, a reddish coloration develops, and slowly deepens to a reddish violet. Lastly, in the so-called "indirect reaction" a violet color is only obtained in the alcoholic extract of the serum.

In jaundice, due to complete obstruction of the ducts, a "prompt direct" reaction is always obtained—figures as high as 50 mgs. of bilirubin per 100 cc. of serum not being infrequent. In true hemolytic jaundice the reaction is always of the "delayed direct" or the direct type is negative, but the "indirect reaction" is always positive.

The Inorganic Constituents of the Blood

In comparison with the organic constituents, the inorganic constituents of the blood undergo comparatively small changes. The values for the calcium, phosphorus, sodium, potassium and magnesium remain comparatively constant in health, and in the case of the latter two, no significant variations have been encountered in disease.

A marked reduction of the calcium content of the blood follows the removal of the parathyroids with the development of tetany. In infantile tetany figures between 3.5 and 7.0 (normal 9 to 11) mgs. per 100 cc. of serum have been found where symptoms of tetany were present. In advanced nephritis with phosphate retention and acidosis, a marked lowering of the calcium content of the serum has been observed. In other cases a knowledge of the calcium content of the serum seems of doubtful value.

The inorganic phosphorous content of the serum ranges from 2.5 to 5.5 mgs. per 100 cc. of serum, being somewhat higher in children. The characteristic feature of the serum of the rachitic infant is its poverty in inorganic phosphorous—sometimes sinking as low as 0.8 mgs. per 100 cc. of serum. In the last seventy-two cases of rickets examined by Howland,[20] the average content of inorganic phosphorous was only 2.5 mgs. per 100 cc. of serum. The calcium content is not necessarily reduced in uncomplicated rickets. In Howland's seventy-two cases the average calcium content of the serum was 9.6 mgs. per 100 cc. of serum—a reduction of approximately only 5 per cent. However, if tetany supervenes, a great reduction of serum calcium occurs, and at the same time the inorganic phosphorous rises to a more normal figure.

According to Howland, the existence of rickets may be deduced from a determination of the product of the serum calcium and the serum phosphorous in mgs. per 100 cc. In the healthy child Calcium $\times$ Phosphorous $=$ 50 to 60. When the

product falls below thirty, rickets is invariably present. If the product exceeds forty, the diseased bones are healing or rickets has not been present. The latter figure may be reached by the product of a serum calcium of 8 mgs. × a serum phosphorous of 5 mgs., or by a serum calcium of 10 mgs. × a serum phosphorous of 4 mgs. Improvement in rickets may be brought about either by the administration of the antirachitic vitamine (cod-liver oil), or by exposure to sunlight, or ultra-violet radiation. With any of these methods of treatment a rise in the serum phosphorous occurs. The increase of phosphorous in the blood as the result of exposure to the solar rays is of especial interest as being one of the first direct chemical response to the action of light demonstrated in the human body.

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THE PREVENTION AND TREATMENT OF ECLAMPSIA

By Louis H. Douglass, M.D.

From the Department of Obstetrics, University of Maryland

The desire to bring this paper into being has arisen from the number of cases which are constantly being brought to this clinic because of eclampsia, and which have received prenatal care from their own physicians. The contrast between these cases and those which are cared for prenatally in our clinic is so marked that it is believed a short discussion would be of some benefit. In the past two years we have treated in this hospital twenty-nine cases of eclampsia, none of which were from our own clinic, all being referred by outside physicians. In the same period of time we have given prenatal care to a little over two thousand expectant mothers, without a single case developing. This in spite of the fact that we are working with the most ignorant element of the city, and the hardest element to handle from a medical standpoint.

This brings up the question as to whether eclampsia comes on without warning, and in spite of the admission of the authorities on this subject that it may occur, I feel compelled to say here that I do not believe it does. While I cannot absolutely deny the possibility of such an accident, I have never seen it, either in the cases occurring in our own clinic, for there have been such, or those referred by other physicians. Being particularly interested in this matter, I have gone to considerable pains to ascertain the facts in these cases, and in every case there appears to have been an abundance of evidence of impending disaster. Since June 1, 1917, there have occurred thirteen cases of eclampsia in patients receiving prenatal care from us. As there have been none for the past two years, we may say that these thirteen occurred from June 1, 1917, to June 1, 1922. In this time there were a total of 4,515 women who applied to us for care, giving an incidence of 0.29 per cent, so that since June, 1917, our incidence of eclampsia is as follows:

June, 1917_____June, 1918_____	3 cases
June, 1918_____June, 1919_____	5 cases
June, 1919_____June, 1920_____	2 cases
June, 1920_____June, 1921_____	2 cases
June, 1921_____June, 1922_____	1 case
June, 1922_____June, 1924_____	0 cases
Total_____	13 cases

In each of these cases the prenatal record gives abundant evidence of trouble, and the patients developed eclampsia for one of several reasons:

First Pre-eclamptic toxemia was not recognized, although it should have been.

Second Recognized, no effort was made to combat it.

Third Pre-eclamptic toxemia was recognized and an honest effort was made on our part, but the patient either from ignorance or stubborness, refused to cooperate.

The last constitutes a very small minority of the cases, there being only two such. We feel that improvement in our prenatal care is responsible for our increasingly lowered number of cases and that an outline of our treatment may help in decreasing the incidence generally.

We try to have a patient see us as early as possible in her pregnancy. At the time of the first visit a history is taken, blood for a Wassermann and blood pressure. She is then examined and her pelvis measured, when, if everything is normal and her pregnancy early she is advised to return in a month with a specimen of urine. These visits are continued at decreasing intervals throughout her pregnancy until in the last month she visits us weekly. At each visit she brings a specimen of urine, which is examined, and has her blood pressure taken. She is also questioned as to symptoms, particular stress being paid to headache, edema and constipation. About four to six weeks from the expected date of confinement she is again examined abdominally and an attempt made to make a diagnosis of presentation, etc. Any abnormalities arising during pregnancy are looked into and treated, but as we are particularly concerned in toxemias in this paper, I will not go into any of the other complications.

The more we see of these patients in our clinic, the less dependence do we pay to symptoms and negative urine, although headache, edema and constitpation are important, and the more to the blood pressure, and in no instance has there developed eclampsia in a patient with a normal blood pressure. I do not believe enough stress is laid upon this matter generally, the majority of authors mentioning that there is usually an elevation, but going no further. I am, however, of the opinion that this is the most important single care that can be given an expectant mother. I do not mean that every woman with an elevation of blood pressure has pre-eclamptic toxemia, or that every case of toxemia will show an extremely high pressure, or

that an excessively high pressure is necessary for convulsions, but no woman is in danger of eclampsia with a systolic pressure below 130 and a diastolic below 95, and conversely every woman whose pressure is above these limits must be most carefully watched. It must be remembered that the systolic pressure is subject to many variations, exertion, fright, etc., often causing a temporary rise to rather alarming heights. There is, however, in these conditions, no corresponding rise in the diastolic pressure, and this appears to be much more reliable.

Should therefore, one of our patients show at any time during her pregnancy such an elevation, she is at once put on a protein free diet, urged to drink large quantities of milk and water, and purged daily or every other day with Epsom Salts. She is advised to return in a week for another blood pressure reading and urinalysis. The treatment is continued either until delivery or her pressure has fallen to, and shows a tendency to remain within, normal limits. Her diet is then increased gradually, and the purgation diminished somewhat. In a majority of the cases this is sufficient, the blood pressure falling to normal limits and pregnancy proceeding to term without incident. Some of these patients require more vigorous treatment and more careful watching and these we put on milk and water diet, one glass of each every alternate hour, and purge more drastically. Should this prove ineffectual, they are transferred to the hospital, put to bed and the above treatment continued. If a private patient she should have been in bed before this. Should there be no improvement, a venesection is done, about 500 to 700 cc. of blood being withdrawn. In this manner we are able to carry practically all of our cases to term, there being only an occasional one who fails to respond, and should this happen we proceed promptly to interrupt the pregnancy, for after all is said and done, the child in the uterus is in some, as yet unknown manner, responsible for the toxemia and women who are not pregnant do not have eclampsia. The technique of this procedure varies so with the individual case that it would be unprofitable to enter into a discussion of it now. Should labor occur spontaneously in one of these patients, she is watched most carefully, the blood pressure being taken at hourly intervals. She is not to be allowed to continue in hard labor for too long a period, operative interference being resorted to if it seems to be indicated. At delivery uterine bleeding to a moderate degree is encouraged, the idea being to eliminate toxins. Unless bleeding appears to be severe, no ergot is given, and the patient kept as quiet as possible, visitors being reduced to the minimum, and morphia being given if she appears restless. In the treatment of the eclampsia itself there

is very little to be said that will add to the existing knowledge, and I can only justify myself in taking up your time for a brief resume because an insistence to certain details may help to impress them.

There still remains, and to a certain extent, properly, two methods of treating eclampsia, the so-called conservative, and in contradistinction to it the radical method. In the first, no attempt is made to terminate the pregnancy, the patient being bled, purged and kept quiet with sedatives, morphine, chloral, and in some instances chlorform or other anæsthetic being used. The adherents of the radical method of treatment, on the other hand, argue that, inasmuch as the pregnancy itself is responsible for the condition, the patient would be more likely to recover, if she were not pregnant. They, therefore, proceed to empty the uterus promptly, and in as conservative a manner as possible.

Each of these methods has its advocates, though more and more are coming to treat these cases conservatively as time goes on, and printed statistics tend to show much better results from this than from the radical method.

Personally, I do not believe that any hard and fast rules can be laid down which will cover all cases, and each patient requires separate and careful consideration before deciding on a definite line of treatment. Certainly the foetal mortality is less when the case is treated radically, presuming, of course, that the patient is in capable hands and that the proper method of delivery has been chosen. If it is felt that delivery can be accomplished without any great danger to the mother, as I firmly believe is fairly often true, then it should be done, in the interests of the child if for no other reason. However, if we feel that delivery would be decidedly harmful to her, and these constitute a majority of the cases, we are not justified in sacrificing a mother for the sake of the unborn child. One of the best illustrations of the conservative method of treatment is that followed by Stroganoff in his clinic and is as follows:

1. Upon Admission—(a) Dark room with minimum of noise. (b) Special nurse. (c) Examination or disturbance of patient only when absolutely necessary, and then usually under chloroform. (d) 0.015 (0.01-0.02) gram morphine hypodermically, while under chloroform narcosis; usually about 10 to 15 grams of chloroform being employed.
2. One Hour After Admission—2.0 (1.5-2.5) grams chloral hydrate per rectum with 100 c.c. normal salt solution and 100 c. c. milk. Should the patient be conscious the chloral hydrate can be administered without the use of chloroform. (NOTE—Chloral hydrate is always administered without the use of chloroform, except where the patient has had one or more convulsions after admission; then about 10 grams of anæsthetic are used with each dose of chloral hydrate.)

3. Three Hours After Admission—0.015 (0.01-0.02) gram morphine hypodermically under 10 to 15 grams chloroform.
4. Seven Hours After Admission—2.0 (1.5-2.5) grams chloral hydrate as above.
5. Thirteen Hours After Admission—1.5 (1.0-2.0) grams chloral hydrate as above.
6. Twenty-one Hours After Admission—1.5 (1.0-2.0) grams chloral hydrate as above.
7. After Each Convulsion—Oxygen is administered as quickly as possible. This is kept up until the breathing improves, usually about five minutes.
8. After Three Convulsions in the Clinic—Venesection of not more than 400 c. c. is resorted to.
9. In Case of Frequent Convulsions—Chloroform and chloral hydrate to be used more energetically than outlined above.
10. No Convulsions for Thirty-four Hours—If patient has been free from fits for twenty-four hours or longer after admission, and has not yet been delivered, she should be given about 0.5 grams chloral hydrate every eight hours for about three days.
11. Child—Operative delivery is resorted to only when intervention becomes absolutely necessary for the sake of the child.

This method, which has just been outlined, is followed in all cases of eclampsia during labor. In antepartum eclampsia, the same procedure is used except that usually it is advisable to employ smaller quantities of the narcotics. Stroganoff believes that postpartum eclampsia is easier to treat and accordingly recommends the same treatment as in the mild type.

The most usual methods of emptying the uterus in the radical method are accouchment force, followed in most instances by Internal Podalic Version and Breech Extraction, and in some by forceps, the latter operation alone or by Abdominal Cæsarean Section. In addition to this the various eliminative tracts of the body are stimulated, the intake of nitrogenous food is limited, and again the patient is kept as quiet as possible and treated symptomatically. Here a few words as to the eliminative means are, I believe, apropos, and a brief resume is worth while.

First—The Kidneys: These are best stimulated with large amounts of water, given by mouth, rectum, subcutaneously or intravenously. Diuretics are of no great help, and usually raise the blood pressure, which is already too high.

Secondly—Intestinal Tract: Epsom Salts in large doses, one to two ounces every three hours until freely effectual. If patient is conscious, give by mouth, otherwise by rectal installations, following a copious flushing of the lower bowel with large amounts of 2 per cent Sodium Bicarbonate Solution. These flushings and instillations of Epsom Salts are repeated at four-hour intervals until the bowels are moving freely. Croton oil, for some reason does not appear to purge these patients freely, and we have practically discontinued its use.

SKIN—Here we may use hot packs to produce sweating, but I have always felt that the small amount of elimination produced did not begin to compensate for the depression accompanying this procedure.

BLOOD STREAM—This must be considered as one of the big eliminative tracts of the body in this condition, for by venesection we may reduce rapidly and markedly the toxemia, and when properly employed is one of the greatest aids we have toward the care of these patients. It should never be employed immediately before operation as it is impossible to say just how much bleeding will be encountered at a delivery or postpartum. The best indication of the amount of blood to withdraw is the blood pressure which can be reduced twenty or thirty points with safety, if this does not mean a fall below 130 mm. I feel compelled to add here that success in the treatment of eclampsia can only be obtained at the sacrifice of a great deal of personal comfort and convenience, and if uniformly good results are to be obtbained the physician must remain at the bedside or at least see the patient at intervals of not more than one hour and until all danger has passed.

The twenty-nine cases which furnished the incentive for this paper were divided as follows:

Primipara	22	
Multipara	7	
	—	29
Eclampsia Ante-partum	17	
Eclampsia Intra-partum	3	
Eclampsia Post-partum	9	
	—	29
DELIVERY WAS ACCOMPLISHED BY:		
Normal means	10	
Induction of labor	2	
Forceps	4	
Version and Extraction	2	
Cæsarean Section	11	
	—	29
MATERNAL MORTALITY	2	7.0%
Eclampsia Ante-partum, Delivered by Cæsarean Section, Cause of death—Eclampsia	1	
Eclampsia Ante-partum, Delivered by Cæsarean Section, Cause of death—Infection	1	
	—	2
FOETAL MORTALITY	5	17%
Still born	3	
	—	
Normal labor	2	
Forceps	1	
Prematurity		
Cæsarean Section	1	
Toxemia		
Cæsarean Section	1	
	—	5

In conclusion, I would like to say that every pregnant woman must be regarded as a potential victim of Eclampsia, and that, irrespective of symptoms, the blood pressure must be taken and urine examined at frequent intervals, and these intervals decreased as the patient approaches term. For practical purposes we consider the individual in danger whenever the systolic pressure goes to 130 mm. or over, or if the diastolic is above 95 mm., and should immediately begin treatment. The strenuousness of the treatment is to be decided by the response of the patient, some being very stubborn, while others react almost immediately.

It is my belief that if the above suggestions be followed, the incidence of Eclampsia can be markedly reduced, and indeed I see no reason why every physician cannot show results in his private practice as good as those of our own clinic. Eclampsia is, in my opinion, an absolutely preventable condition today, and should not occur except in extremely rare instances.

President Raymond Allen Pearson

BULLETIN

OF THE

SCHOOL OF MEDICINE UNIVERSITY OF MARYLAND

THE NEW PRESIDENT

The resignation of President Albert F. Woods in the spring of this year came as a surprise and shock to the Faculty of the University of Maryland. President Woods leaves the University to assume the duties of Director of Scientific Research in the United States Department of Agriculture. The appointment is an important one to the future of agricultural science. Though, regretting the departure of Dr. Woods, the members of the university feel that he and the university with which he has been associated are to be congratulated upon his selection for the honor of being the first director of this new bureau.

President Woods leaves the university strong, well coordinated and firmly established. The record of having brought this about during the period of his administration will keep forever the name of President Woods high among the list of those who shall be called in the future to the leadership of this institution.

The new president of the University of Maryland, Raymond Allen Pearson, was born in Evansville, Indiana, in 1873. He was graduated from Cornel University in the Class of 1894, where he received his M. S. degree in 1899. He later received the degree of LL.D. from Alfred University in 1910, and that of Doctor of Agriculture from the University of Nebraska in 1917. He is a Fellow of the American Association for the Advancement of Science.

After serving several years as assistant chief of the Dairy Division of the United States Department of Agriculture, Dr. Pearson spent a short time with a large commercial organization. In 1903 he was made Professor of Dairy Science at Cornell University, and served as Commissioner of Agriculture of New York State four years, until 1912, when he was made president of the Iowa State College of Agriculture and Mechanic Arts. Under his direction this college has become recognized in higher educational circles as one of the best in the United States.

During the World War Dr. Pearson served as Assistant United States Secretary of Agriculture. He has for some years been chairman of the Executive Committee of the Association of Land Grant Colleges and Universities in the United States. He has contributed liberally to scientific, educational and agricultural journals, and is nationally recognized as an able student of agriculture and economics, and as an educator of unusual merit.

Dr. Pearson comes of an old New England family, his wife, who was a Miss Dunsford, was a native of New York State. One of his brothers, Leonard Pearson, was Professor of Veterinary Medicine at the University of Pennsylvania, and was recognized as a world authority on bovine tuberculosis. His other brother, Edward J. Pearson, is president of the New York, New Haven and Hartford Railway.

In the reorganization of the Maryland Agricultural College and other State agricultural agencies, Dr. Pearson's advice was found most helpful, and his interest has continued, so that he does not come as a stranger to the University of Maryland. Dr. Person comes to the university, moreover, with an unusual record of achievements. The university and the medical school welcome him.

RECENT IMPROVEMENTS IN THE UNIVERSITY HOSPITAL

In recent years visiting alumni uniformly comment upon the improved appearance of the interior of the University Hospital. Within the old brick walls of the original buildings, always too small for the number of its patients, room has nevertheless been found to install a number of new departments, and to notably enlarge others. Withal by the judicious application of light colors to the walls, and by the renewal of the furnishings, a pleasant effect of space and cleanliness has been obtained.

The present year has witnessed two notable improvements in the Hospital: the addition to the Children's Ward and the expansion of the Medical Dispensary.

Many of our readers will recall that at the top of the surgical amphitheatre there existed a wide platform from which an abandoned stairway descended four flights to the street level. Neither stairway nor platform have, in recent years, served any useful purpose. For some time the Superintendent has mediated upon the best use of this space. The final solution

has now been found. The platform running about the back of the amphitheatre has been lowered a few feet, widened by the inclusion of a few ranges of back seats, separated from the amphitheatre by a partition, and thus a well-lit, long ward obtained. Floored with terazzo and equipped with metal cubicles on one side, and open beds on the other, it forms an important addition to the Children's Ward with which it has been connected by a wide doorway.

Especially important to the Pediatrics Service is the opportunity thus gained of more adequate isolation of all new admissions. Quarantine, that bane of children's wards, which has so handicapped our children's service in the past, should be much less frequently necessary in the future. The additional sixteen beds, while by no means meeting all the requirements for hospital facilities of our large out-patient department, the Babies' and Children's Clinic, are nevertheless a precious supplement to our limited accommodations for Pediatric cases.

As for the old stairway, that has been ripped out, and the well floored over at each level, thus furnishing four additional rooms: a dispensary record office in the basement, the Superintendent's office on the Lower Halls, a room for Basal Metabolic determination on the Upper Halls, and a dressing room in the surgical suite.

For some years it has been planned to more closely affiliate the work of the so-called medical special clinics—gastro-enterology, pulmonary diseases, cardiology, neurology, and metabolic diseases—with that of the General Medical Clinic. In order to carry out this needed change, a grouping of all these clinics was necessary. To make such a change possible, the Superintendent surveyed once again that crowded basement in which some forty thousand out-patients are treated each year. Down in the southwest corner there was an old vault for records which could be dispensed with, and a pit containing an ancient boiler for the hot water of the hospital, and also a rest room for students. The vault was erased; a new boiler was placed over in the powerhouse; the rest room disappeared. What chance have students for rest! When the new partitions were up there were rooms for the special clinics, and a waiting room for patients, all in the suite with those of the General Medical Clinic. In one of these new rooms is installed the long-awaited Cambridge electrocardiograph. The old chimney from the boiler room is being used as a ventilating shaft.

That it has been possible to carry these carefully laid plans to a successful conclusion has been due to the generosity of friends of the Hospital. The Staff, as well as the community

which they serve, owes a debt of gratitude to the donors whose identity we take pleasure in recording. The new Children's Ward was added through a gift of $3,000.00 from Mr. Walter B. Brooks, Sr., and it was owing to the ever-ready cooperation of the Woman's Auxiliary Board that we obtained $1,500.00 with which to undertake the changes in the Dispensary.

ST. MICHAEL AND THE DEVIL

Since 1835 until the recent fire, which partially gutted the main building of the University of Maryland, there stood on the wall at the head of the stairs leading into Anatomical Hall a crayon reproduction of Raphael's celebrated painting, St. Michael smiting the Devil. It was in every sense a work of art, and its remembrance is cherished by hundreds of former students who treasured it as one of the immutable landmarks of the old institution. Though the original sketch has been destroyed, the University is, indeed, fortunate in having during the past year come into possession, through the generosity of a relative of the artist, of a very handsome oil-painting of the same subject. This has been hung in the room opposite the Dean's office, where it is now on view. Inasmuch as the identity of the artist of the sketch on the wall long remained a mystery, the following facts derived from a letter from Mr. Charles B. Rogers, a nephew of the artist, are of particular interest:

"My uncle, Frederick Butler, then a student in, I think, 1835, shortly before his graduation, arranged with the janitor of the building to allow him to stay over Saturday, Saturday night and Sunday in the building, telling, I suppose, what he proposed to do. During this Saturday and Sunday he drew in charcoal, and did the work masterfully, a sketch of St. Michael, the Archangel, ejecting Satan from Heaven, after the celebrated painting in Rome of Raphael."

Dr. Butler later painted the same subject in oils, and this painting was in the hands of his nephew, Mr. Rogers, until about 10 years ago, when the latter gave it to his niece, Mrs. H. M. Hart. Mr. and Mrs. Hart, having taken up their residence in Italy, determined during a recent visit to this country, in consideration of its connection with the University of Maryland, to loan the picture to the college.

Dr. Frederick Butler was born in 1806. He was a son of Samuel Butler and Maria Fredericka Von Vrents (Bronson) Butler. His father was a member of the firm of Thomas Andrews and Butler, publishers and booksellers, of Boston, Mass. A house of this firm was established in Baltimore about 1793, with Mr. Samuel Butler in charge. Dr. Butler's maternal grandfather, Thomas Bronson, was a skilful artist.

Dr. Butler never married. He lived with his sister, Mrs. Nathan Rogers. He died at her home at Rogers Station, Md., on February 6, 1888.

There are several paintings—portraits—by his hand in the possession of his nephew, Mr. Rogers. There is a story regarding a Venus, said to have been drawn on the same wall as was the St. Michael and the Devil, but which, unfortunately, was whitewashed over by a new janitor. This subject also was later reproduced by him in oils, but the painting was eventually destroyed in a fire.

ST. MICHAEL AND THE DEVIL

By F. BUTLER, M.D.

Dr. Frederick Butler

Taken from a pen and ink drawing by himself, done about 1836

DEATHS

Dr. Joseph Warren Worcetter, Middletown, N. Y.; P. & S., class of 1888; also a dentist; aged 66; died, April 25, 1926.

Dr. William Franklin Twigg, Cumberalnd, Md.; class of 1883; aged 69; died, June 6, 1926.

Dr. James Frank Raine, Sykesville, Pa.; P. & S., class of 1905; aged 57; died, June 3, 1926.

Dr. Claude M. Jones, Grimesland, N. C.; class of 1892; aged 65; died, May 23, 1926, of injuries received when struck by an automobile.

Dr. Frederick Roland Malone, Greensboro, Md.; class of 1882; aged 67; died, May 18, 1926.

Dr. George Robinson Glass, Uniontown, Pa.; P. & S., class of 1891; aged 58; died, June 22, 1926, of cerebral hemorrhage.

Dr. Marshall Price Jones, Churchville, Va.; P. & S., class of 1892; aged 62; died, May 21, 1926.

Dr. Joseph Ambrose Higgins, South Manchester, Conn.; P. & S., class of 1907; served in the M. C., U. S. Army, during the World War; aged 43; died, May 24, 1926, of heart disease.

Dr. Thomas Barker Williams, Ridgeway, N. C.; class of 1877; aged 71; died, May 3, 1926, following a long illness.

Dr. Joseph W. Steele, Baltimore, Md.; class of 1856; aged 95; died, July 16, 1926.

Dr. Roland H. Smith, Havre de Grace, Md.; class of 1875; aged 76; died, May 13, 1926, of paralysis agitans.

Dr. Thomas H. Brayshaw, Glenburnie, Md.; P. & S., class of 1885; formerly professor of climatology and hygiene, Maryland Medical College, Baltimore; aged 66; died, in May, 1926, of heart disease.

Dr. Benjamin L. Long, Hamilton, N. C.; class of 1881; aged 74; died, April 29, 1926.

Dr. William Caulk, Easton, Md.; class of 1867; aged 81; died, May 18, 1926, of senility.

Dr. William Harvey Reinhart, Polk, Ohio; P. & S., class of 1882; aged 69; died, June 7, 1926, of cerebral hemorrage.

Dr. Frank Hyatt, Washington, D. C.; class of 1872; aged 75; died, June 2, 1926, of asthma.

Dr. Manton A. Floyd, St. Stephens, S. C.; P. & S., class of 1893; aged 56; died, April 25, 1926.

Dr. William P. Kanar, Solvay, N. Y.; P. & S., class of 1893; aged 60; died, May 10, 1926, following a long illness.

Dr. Percy Cobun Showalter, Clarksburg, W. Va.; B. M. C., class of 1910; aged 38; died, May 2, 1926, of chronic nephritis.

Dr. John William Laird, Pasadena, Cal.; class of 1891; aged 65; died, May 12, 1926, of cerebral hemorrhage.

Dr. Edmond Jones Williams, Baltimore, Md.; Washington University School of Medicine, class of 1868; aged 85; died, August 12, 1926. He was a Confederate veteran. He attended one course of lectures at the Charleston Medical College.

Dr. George Losekam, Takoma Park, Md.; B. M. C., class of 1897; aged 56; died, July 1, 1926, of gangrene of the legs.

Dr. Leonard Zepp, Baltimore, Md.; class of 1868; aged 81; died, August 11, 1926.

Dr. Guy Hastings Greeley, Merrimack, N. H.; B. M. C., class of 1891; aged 58; died, May 30, 1926, of angina pectoris.

Dr. Oscar Stansbury, Chico, Cal.; class of 1873; aged 74; died, July 19, 1926, of cerebral hemorrhage.

Dr. Robert H. Towles, Houston, Texas; Washington University School of Medicine, class of 1873; aged 70; died recently.

Dr. Charles C. Wiley, Pittsburgh, Pa.; P. & S., class of 1875; aged 72; died, in June, 1926.

Dr. Haughton Baxley, Markham, Va.; P. & S., class of 1889; one of the founders of the Maryland Medical College, and of the Franklin Square Hospital, Baltimore; aged 58; died, May 28, 1926, of pneumonia.

Dr. David Jasper Hill, Lexington, N. C.; P. & S., class of 1893; aged 62; died, May 13, 1926, of angina pectoris.

Dr. John Columbus Hammack, Walkertown, N. C.; P. & S., class of 1895; aged 58; died, May 15, 1926, of myocarditis.

Dr. John Hazeltine, Jamestown, N. Y.; P. & S., class of 1880; aged 73; died, May 10, 1926, of uremia.

Daniel Base, Ph. D., for many years a professor of chemistry in the Medical School of the University of Maryland; aged 56; died, June 17, 1926, following a long illness.

Dr. Benjamin Rush Logie, Washington, D. C.; class of 1890; aged 58; died, April 12, 1926, of arterio-sclerosis.

Dr. Leonard E. Ladd, Van Wert, Ohio; P. & S., class of 1881; aged 68; died, July 8, 1926, of angina pectoria.

Dr. Edwin Zimmerman, New York; class of 1879; aged 68; died, July 9, 1926, following an operation for carcinoma of the throat.

Dr. Stephen Stoddard Stone, Ridgely, Md.; class of 1894; aged 58; died, May 24, 1926, of chronic interstitial nephritis.

Dr. Basil Ernest Swiger, New Martinsville, W. Va.; B. M. C., class of 1905; aged 47; died, May 23, 1926, of interstitial nephritis.

Dr. Harry N. Willis, Wilmington, Del.; class of 1888; aged 60; died, April 11, 1926, of myocarditis.

Dr. John Henry Sullivan, Mt. Clemens, Mich.; B. M. C., class of 1898; aged 61; died, February 28, 1926, of carcinoma of the stomach.

Dr. John B. Schwatka, Baltimore, Md.; class of 1882, also B. M. C., class of 1886; formerly a member of the Faculty of the Maryland Medical College and a past president of the Medical Alumni Association of the University of Maryland; aged 65; died, June 14, 1926, of psoas abscess and arterio-sclerosis.

Dr. Joseph Thomas Coulbourn, Birmingham, Ala.; class of 1886; aged 64; died, September 3, 1926, of pneumonia and peritonitis.

Dr. Eugene Pendleton, Cuckoo, Va.; class of 1871; aged 73; died, September 9, 1926; of carcinoma of the bladder.

Dr. William McCoy Murphy, Alameda, Calif.; P. & S., class of 1879; aged 81; died, June 6, 1926, of cerebral hemorrhage.

Dr. Richard Henry Lewis, Raleigh, N. C.; class of 1871; professor of diseases of the eye and ear, and of hygiene, University of North Carolina, 1902-1909; past president of the Medical Society of North Carolina; member of the State Board of Medical Examiners, 1884-1888; aged 76; died, August 6, 1926.

Dr. William Bartholow McDonald, Baltimore, Md.; B. M. C., class of 1897; aged 52; died, July 17, 1926, of heart disease.

Dr. George Israel, Rochelle, New York; P. & S., class of 1898; aged 58; died in August, 1926.

Dr. George Herman Hammerbacher, Baltimore, Md.; class of 1899; aged 58; also a graduate of the School of Pharmacy, class of 1889; died, October 3, 1926.

Dr. Otis Mills Linthicum, Rockville, Md.; class of 1890; aged 60; died, August 23, 1926.

Dr. Oliver Andrew Memges, National Military Home, Kansas; B. M. C., class of 1908; aged 49; died, August 9, 1926, of septicemia.

Dr. Michael J. Kelly, Windsor Locks, Conn.; B. M. C., class of 1897; aged 51; died, August 3, 1926, following a long illness.

Dr. William McAlpine, New York, N. Y.; P. & S., class of 1886; aged 69; died, March 30, 1926, of cerebral hemorrhage.

Dr. William Rawlings, Sandersville, Ga.; class of 1875; aged 75; died, August 1, 1926, of septicemia.

Dr. Henry Welsh Wickes, Surgeon, U. S. Public Health Service; class of 1892; aged 57; died, July 20, 1926.

Dr. J. A. Griffin, Clayton, N. C.; P. & S., class of 1881; aged 71; died August 3, 1926, of heart disease.

Dr. John G. Ames, Chicago, Ill.; class of 1881; aged 73; died, July 28, 1926, of angina pectoris.

Dr. Charles D. Baker, Rohrersville, Md.; class of 1881; aged 69; died, August 2, 1926, of heart disease.

Dr. Alfred Henry Quessy, Fitchburg, Mass.; P. & S., class of 1902; aged 50; died, August 26, 1926.

Dr. Henry W. Wilcox, Jr., Deposit, New York; B. M. C., class of 1891; aged 57; died, August 7, 1926, of carcinoma of the throat.

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ACUTE APPENDICITIS

By D. J. PESSAGNO, M. D.

The rapid advance of modern medicine demands so much study that the solved problems of an earlier time attract little attention. The work of Fitz, McBurney, Weir, Murphy and others of their generation taught the recognition of appendicitis and its proper treatment.

Appendicitis is the most common, as well as the most important, acute abdominal disease which can be cured by surgical operation.

The mortality from appendicitis is greater than the combined death rate from extrauterine pregnancy, pyosalpinx, gallstones, pancreatitis and diseases of the spleen and thyroid gland, and is nearly equal to the combined mortality from peptic ulcer, gallstones and intestinal obstruction. This great mortality is more impressive when we remember that most victims of appendicitis are vigorous young adults. (Willis, *Surg., Gyn. and Obst.*, April, 1926.)

There are no extensive statistics to show the morbidity from appendicitis but any reasonable estimate of the frequency of the disease will make this morbidity a great one. Mortality statistics show a gradual rise in the death rate from appendicitis in recent years. From 1920 to 1925 the death rate rose 30%. (Guerry, *Annals of Surgery*, August, 1926.) Wherever this mortality could be analyzed, the fatal cases were found among those having gangrene, peritonitis and other complications of the later stages of the disease.

The symptoms of acute appendicitis are well known and the disease is recognized as a rule by any physician who makes a careful study of his patient. That a seriously diseased appendix should be removed by surgical operation is generally acknowledged.

At the onset of the attack, there are no signs or symptoms that will enable us to predict with certainty what will be the course of the disease. This was the lesson taught by the pioneers, whose practice brought the mortality from appendicitis down to the low figures of the first and second decades of the century. A review of the lesson may stop the rising mortality of the last five years.

"The time to decide whether a case of appendicitis is catarrhal, perforative or gangrenous is after the surgeon has removed the specimen." (Moore, *Jour. Amer. Med. Assn.*, 1914.) It is easy to make a diagnosis of appendicitis in the early stages of the disease, but anyone who attempts to decide the nature of the pathological process from external symptoms will suffer many humiliations. "No man, no matter how large his experience may be, is able to judge from the early symptoms whether the case is going toward a favorable or an unfavorable result. In the first twenty-four or thirty-six hours, you cannot tell whether the case is going to terminate favorably or unfavorably." (Murphy, *Clinics,* Volume II, p. 770, 1913.)

There is no medicinal treatment for appendicitis. Rest will allow those appendices which are slightly damaged to recover from the attack, but neither internal medicine nor external application has any direct influence on the course of the pathological process. At the present time opium is seldom given in acute appendicitis. The lesson of its masking influence on the symptoms has been well taught. It would be life saving if the warning against the indiscriminate use of purgatives were as well heeded. Of the two the purgative is the more deadly. The onset of a diffuse peritonitis many times can be traced directly to the administration of a purgative. Suppression of food and a well given enema will relieve a simple colic, and will not do harm to an inflamed appendix.

Our personal experience, shown by the study of 250 consecutive cases of acute appendicitis operated upon in Dr. McGlannan's service at the Mercy Hospital prior to August, 1925, indicates a tendency on the part of patients and physicians to delay operation in this disease. At the same time it proves the value of early intervention from the point of view of lessened morbidity as well as diminished mortality.

The 250 patients included 139 males and 111 females. Two hundred and forty-two were of the white race, seven Negroes and one Mongolian. There were 142 between the ages of eighteen and thirty-five, 63 were over thirty-five and 45 below eighteen years of age. The relation between the duration of the attack and the mortality is shown in the table.

TABLE 1

DAY OF ATTACK	NO. OF CASES	DIED	MORTALITY
1	51	0	0
2	69	2	2.9%
3	49	3	6.1%
4	30	4	13.3%
5 and later	51	3	5.8%

The great advantage of an operation performed during the first twenty-four hours of the attack when the pathological changes are confined to the appendix or its immediate vicinity is evident.

To show the pathological conditions found at operation, the duration of illness after operation, post-operative complications and mortality in relation to the duration of symptoms before operation, we have grouped the cases as follows:

GROUP 1.

Time of attack 1-12 hours. Forty-three cases. In two cases the appendix was gangrenous at time of operation and two others showed some local peritonitis. There were no abscesses in this group. In eight cases the peritoneum was drained, using but one drain in five cases and two in three. All the patients recovered without any complications, save a small stitch infection in one case. The average duration of the stay in the hospital was thirteen days. The extremes were seven and thirty-one days, the patient in the latter case being treated as well for a gastric ulcer.

GROUP 2.

Time of attack 12-24 hours. Eight cases. All the patients recovered without any complications. None showed any evidence of peritonitis and none were drained. The average stay in the hospital was fourteen days, the extremes ten and twenty-one days.

GROUP 3.

Time of attack 24-48 hours. Sixty-nine cases. In four cases a gangrenous appendix was found at operation. In ten cases there was some degree of peritonitis. There were no abscesses in this group. In twenty cases drainage was necessary. In

sixteen the peritoneum was drained, using from one to three drains. In the remainder the drainage was limited to the abdominal wall. There were two wound infections and one post-operative hernia in this group. There were two deaths from a complicating peritonitis, one on the second day and the other on the eighth day. The mortality in this group is 2.9%. The average stay in the hospital was fourteen days, the extremes being six and 106 days.

GROUP 4.

Time of attack 2-3 days. Forty-nine cases. In twelve of the cases, the appendix was gangrenous and in twenty-one there was some degree of peritonitis. There were four abscesses. Drainage was necessary in thirty-four cases. In thirty of these, from three to five drains were used in the peritoneum. There were three wound infections in this group. Three patients developed pneumonia. One had a fecal fistula, one a pelvic abscess and in one case a phlebitis of the left femoral and popliteal veins developed. There were three deaths in this group, two from a diffuse peritonitis, one of which was complicated by a nephritis and a fecal fistula. The other died suddenly on the third day from a pulmonary embolus. The mortality here is 6.1%. The average stay in the hospital was eighteen days, the extremes eight and seventy-six days.

GROUP 5.

Time of attack 3-4 days. Thirty cases. In eleven the appendix was gangrenous. There was a diffuse peritonitis in eleven cases and in four others a less extensive involvement. There were four abscesses in this group. In twenty-one of the thirty cases, drains were needed, all intraperitoneal. In most of the cases three to six drains were used. As complications there were five wound infections and three fecal fistulas. There were four deaths in this series, three from peritonitis and one from paralytic ileus, a mortality of 13.3%. The average stay in the hospital was twenty-six days, the extremes ten and 205 days.

GROUP 6.

Time of attack five days. Fifteen cases. In six the appendix was gangrenous. In eight cases there was a diffuse peritonitis and in one a local process. In five or one-third of the cases, there were localized abscesses. In twelve of the fifteen cases, drainage was employed, using 3-6 drains. There was one wound infection in this series and no deaths. The average stay in the hospital was twenty-two days, the extremes sixteen and thirty-five days.

GROUP 7.

Time of attack six days. Four cases. In two the appendix was gangrenous, two patients had general peritonitis and there were two abscesses. All four of the patients were drained, using in each case from three to eight drains. There were no complications and no deaths. The average stay in the hospital was thirty-five days, the extremes twenty-eight and forty-seven days.

GROUP 8.

Time of attack seven days. Eighteen cases. In two the appendix was gangrenous, six patients had a general peritonitis and one a local involvement. Ten had appendiceal abscesses. Fourteen patients were drained, using from 4-7 drains in each case. There were four fecal fistulas, one wound infection and one post-operative psychosis and parotitis complicating this group. There were three deaths, all from acute spreading peritonitis and its resultant toxemia, with a mortality of 16.7%. The average stay in the hospital was twenty-nine days, the extremes fifteen and 151 days.

GROUP 9.

Time of attack eight days and over. Fourteen cases. In four the appendix was gangrenous, nine showed a general peritonitis and there were nine abscesses. In thirteen of the fourteen cases, drainage was necessary, using in each case from 4-6 drains. One inguinal abscess, one pelvic abscess and an acute pleurisy were the complications in this group. There were no deaths. The average stay in the hospital was thirty days, the extremes fourteen and forty-eight days.

The mortality in the cases complicated by general peritonitis shows a remarkable decline with delay in the time of operation. We attribute this improvement to the conservative treatment of peritonitis, based on the methods outlined by Ochsner. At the same time we wish to emphasize the fact that Ochsner's is not a method of treatment for appendicitis, but for diffuse peritonitis, a dangerous complication of neglected appendicitis, as it is also a method of treatment for peritonitis from other causes as diverse as ruptured peptic ulcer and pyosalpinx.

It is interesting to note that of the fifty-one cases in which operation was performed during the first twenty-four hours, in only eight was drainage required, while in the eighty-one cases coming to operation after the fourth day, drainage was required in sixty-five. The average stay in the hospital increased from thirteen days in the early cases to thirty in the late ones.

TABLE 2

Time of Attack	No. of Cases	Gangrenous Appendices	Peritonitis	Abscesses and Percentage	Cases Drained and Percantage	Average Stay in Hospital	Complications	Deaths	Mortality
1-12 hours	43	2	2	0- 0	8-(1-3)- 18%	13 days	1—Stitch Abscess	0	0
12-24 hours	8	0	0	0- 0	0-(-)- 0%	14 days	0—None	0	0
24-48 hours	69	4	10	0- 0	20-(1-3)- 29%	14 days	3—Suppurating Wound-Hernia	2	2.9%
2- 3 days	49	12	21	4- 8.2%	34-(3-5)- 69%	18 days	9—Sup. Wound-Fistula Pelvis-Lung-Vein	3	6.1%
3- 4 days	30	11	15	4-13.3%	21-(3-6)- 70%	26 days	8—Sup. Wd.-Fistula	4	13.3%
5 days	15	6	9	5-33.3%	12-(3-6)- 80%	22 days	1—Sup. Wound	0	0
6 days	4	2	2	2-50%	4-(3-8)-100%	35 days	0—None	0	0
7 days	18	3	7	10-55%	14-(4-7)- 78%	29 days	6—Sup. Wd.-Fistula, Psychosis	3	16.7%
8 days	14	4	9	9-64%	13-(4-6)- 93%	30 days	3—Pelvis, Groin, Pleura	0	0
Total	250	44	75	34			31	12	

Prolonged disability, additional suffering, increased expense and other disadvantages, physical, psychic and economical, can with reason be attributed to delayed operation in the treatment of appendicitis.

Thus the morbidity as well as the mortality in acute appendicitis depends on the length of time between the onset of symptoms and the removal of the inflamed appendix.

ASTHMA AND ALLIED ALLERGIC CONDITIONS

By Howard M. Bubert, M.D., Baltimore, Md.

From the Medical Department, University of Maryland

Because of the chaotic state of our knowledge on the subject of allergy and the many conflicting opinions as to the basic principles involved, it is difficult to present a paper that will both cover the ground in a comprehensive way and yet avoid being tiresome. I shall attempt to give a general idea of the principles involved; the conditions in which allergy may be suspected; the procedures by means of which a diagnosis may be made; and a rational therapeutic procedure, for the correction of the disease. It will be necessary, at times, to be dogmatic in the interest of brevity and clarity.

Definition

Coca[1] defines hypersensitiveness as follows: "If an individual reacts specifically or particularly, with characteristic symptoms, to the administration of, or to contact with a quantity of any substance, which, to the majority of members of any species of animals, is innocuous, that individual is said to be hypersensitive to that substance."

Quoting him further: "This is again divided into (1) Anaphylaxis, in which specific anti-bodies can be demonstrated and which is common to many species of animals other than man, and (2) Allergy in which the specificity is believed to be entirely due to heredity as no anti-bodies have ever been satisfactorily demonstrated and as it is not capable of being produced artificially as is possible in the case of anaphylaxis." This type of phenomenon is limited to man and includes, according to him, drug idiosyncracies, as opposed to their toxic effect, urticaria, asthma, some cases of chronic bronchitis, food allergies, angio-neurotic oedema, certain arthritic cases, serum reactions and perhaps other conditions.

Read before the Staff of the Maryland General Hospital, Baltimore, Md.

A striking characteristic of all of these reactions is that the symptom complex is generally different in the different animal species for the same group of substances. An example is that the shocked guinea-pig, still quoting Coca, dies of pulmonary involvement while the rabbit seems to die of cardiac failure; on the other hand the person sensitive to timothy pollen shows exactly the same symptoms as the patient with a ragweed hay-fever or asthma as the case may be.

Diseases in Which Hypersensitiveness is Thought or Known to be the Etiological Factor

Asthma, urticaria, hay-fever, chronic bronchitis, certain eczemas, gastro-intestinal reactions in some people, migraine, angio-neurotic oedema, nose and throat conditions, allergic gastro-enteritis, certain cases of arthritis, some hematurias, hypotension and idiopathic epilepsy.

Etiology and Functional Pathology

There seems to be a growing conviction amongst writers on the subject that underlying the entire process there is an endocrine and sympathetic imbalance, and that the hay-fever, or asthma, or what-not, are simply symptoms. To quote several: Duke [2] says: "Dysfunction of the glands of internal secretion, which is rather frequently noticed in cases of general reaction, often adds to the severity of the illness and treatment of these conditions often gives partial relief." Lintz [3] is much more emphatic and states that in a series of 300 cases that he reports, one hundred showed definite stigmata pointing to endocrine disturbance, such as undescended testicle, missing teeth, no axillary hair, hirsutism in females, infantile uterus, enlarged thyroids and other evidences of thyroid pathology. Austrian [4] also feels that the endocrine glands have a part in angio-neurotic oedema.

As to the immediate etiology or functional pathology, namely, the way in which the offending protein acts, there is a great deal of uncertainty. In anaphylaxis some feel that there is a cell reaction at the point affected, and others that the reaction is in the body fluids. Further, some feel that the reaction itself, regardless of the location it adopts, is a chemical poison formed by the interaction of the antigen and antibody, while others feel that it is a physical reaction in the medium. These are pure theories and each has been rendered stronger or weaker as different experiments have been done.

In the case of allergy, the feeling that it is a purely hereditary cytoplasmic hypersensitiveness is fast gaining ground. To present the different arguments in full is, of course, impossible.[5]

Diagnosis

Before discussing the general and special diagnosis of allergic processes, I should like to call to your attention the importance of thinking of allergy in certain conditions in which its presence, as a factor, might readily be overlooked.

First and foremost is the ever-present danger of operating on a patient presenting the symptoms of severe abdominal pain with sudden onset; cold, clammy skin; vomiting and very frequently, but not always, of headache of the most painful type. A careful questioning may often give the surgeon pause, and, perhaps, save him the chagrin of finding a negative abdomen. Most honest surgeons, fortunate enough to have had a large series of cases, will admit that, after going in on what seemed a clear-cut picture of acute appendicitis or gall-bladder disease, they have had, at times, to come out and give a diagnosis of a chronically inflamed organ. I am studying a man at the present time who is subject to migraine attacks, with history of an operation about a year ago for gall-bladder attack, at which the organ was essentially negative and in whom the attacks have persisted. He, by the way, had a brother with asthma who died last week of a complicating emphysema, and has two children, one of whom is thirteen years of age and has had typical migraine attacks for a year or more, which are increasing in severity, and the other, ten years old, is beginning to have similar attacks. An interesting thing about them all is that their attacks usually come on from Tuesday to Thursday, and seldom, up to the present, at any other time.

In a series of three hundred cases, published by Lintz,[3] of allergic cases, he found eleven hematurias that cleared up upon protein therapy.

The skin man might, also, save quarts of calamine lotion and pounds of zinc oxide if this type of etiology had been ruled out in many of their cases. Most of them are very much alive at the present time to this possibility in cases of chronic eczemas, psoriasis, urticaria, rhus toxicodendron poisoning, angioneurotic oedema and various occupational forms of dermatitis, pruritus, etc.

My attention was recently called again to a case in which a child, undergoing transfusion, developed urticaria, angioneurotic oedema and signs of circulatory collapse, which promptly cleared up upon the administration of adrenalin. The frequent occurrence of this phenomenon would suggest cutaneous testing of recipients in cases of contemplated transfusions, as the possibility of harm in thus shocking seriously ill patients would not seem very remote.

(a) General Diagnosis of Allergic Conditions

The diagnosis of these cases is usually laborious and time-consuming, and at times impossible as regards the finding of the specific protein involved.

The initial step is, of course, to decide in your own mind as to the nature of the patient's disease—for instance, asthma or hay-fever. Then it is important to search for extraneous causes, such as nose and throat pathology, foci of infection, heart lesions in asthma or chronic bronchitis, the presence of an accompanying emphysema, as these all influence your treatment and your prognosis.

F. H. This is quite important in these cases as the statistics show a positive finding in well over fifty per cent of the cases in most of the conditions listed above.

P. H. It is at times possible, by a careful questioning of the patient about the onset of his trouble to find the protein involved which, as in asthma, may later be obscured, because these patients asquire an asthma habit so that all sorts of irritants, such as cold air or non-specific dust, may iniate an attack. One should also ask carefully as to the occurrence of other forms of allergy in the past.

P. I. The questioning here must be very carefully carried out in an attempt to learn, if possible, what the offending substance is, or, at least, with the hope of narrowing down the field for protein tests.

A. Seasonal variation: Do the symptoms complained of come on at particular seasons of the year, as spring and fall, in the typical rose-fevers or hay-fevers? If in the spring, you would naturally suspect a grass or plant flowering about that time of being the offending agent. As a matter of fact, in a vast majority of the cases of rose-fever, timothy reactions will be obtained. If, on the other hand, the patient gives the characteristic history that the symptoms begin promptly on the fifteenth of August each year, then you have a perfect right to feel that rag-weed is probably the offender. Some statistics say that rag-weed is, at least, partially at fault in over ninety per cent of the fall cases.

Another patient may come in and say that during certain mid-summer months he is afflicted with symptoms; upon questioning you may find that he goes to the country, where dogs and horses are kept.

When the patient says that the symptoms persist almost the entire year, then some agent, to which he is constantly exposed, must be looked for, as milk, wheat, feathers, cosmetics, dogs and cats, at home, or he may be carrying a chronic focus of infection in a sinus, in the tonsils or in some other usual location.

B. Locality: Certain patients will be exposed to certain gases while at work, as in a case I know of, who had asthmatic attacks as long as he was exposed to sulphur fumes at Sparrows Point steel mill; if he rode in the same locality in a machine and the wind was blowing in his direction, a severe form of asthma would develop. Certain sections of the country have pollens that are practically unknown in other sections, thus timothy is a great factor in spring rose-fevers in the Northeastern States, while Bermuda grass is almost constantly charging the air with pollen in the South, Southwest and California.

C. Infrequent Attacks: Some food or other agent to which there is only occasional exposure must be considered. A case I know of complained of asthma, and, after careful questioning, it was brought out that his attacks came on when his peach orchard was in bloom and he worked around the trees. His physician had an extract of peach blossom made, and obtained a marked cutaneous reaction. It is of interest here that a great deal of relief was obtained with an experimental peptone capsule administered per orum.

In children, if a skin lesion is present, food proteins, especially egg white, wheat, milk, beef, tomatoes, oats, fish, pork, should be suspected. In hay-fever suspect, according to the locality and the season of the symptoms, rag-weed, timothy, golden-rod, red-top, sunflower, etc.

Horse emanations are the most frequent animal cause of hay-fever.

Bacteria most frequently concerned in bronchial asthma are Staph. pyogenes aureus and albus, streptococcus hemolyticus, micrococcus catarrhalis. Practically all writers agree that bacteria play a dominant role in only about fifteen per cent of the cases. Formerly they were given a predominant place in the etiology.

Physical Examinations

This, of course, is important to determine if possible just what changes are present. You may, for instance, have an asthma that is cardiac in origin, or, if a marked emphysema is present, your prognosis for complete relief is, of course, bad as far as results from this treatment are concerned.

Laboratory

The laboratory may, by showing you an eosinophilia, help confirm your diagnosis, or, by determining the specific organism in a focus of infection and preparing an autogenous vaccine, materially aid you in treating bacterial cases that cannot be completely freed of focal infection.

Special Examinations

In all cases of respiratory allergy, as rhinorrhoea, frequent colds, asthma and hay-fever, the nose and throat specialist should be asked to correct all obvious anatomical defects, or, of even more importance, remove foci of infection in the toncils, adenoids and sinuses.

In the event that the patient is suffering from a gastro-intestinal condition and allergy is suspected. it will probably be a case that has had a thorough gastro-intestinal study; should this not be the case, such a study should certainly be strongly recommended.

Skin lesions, like gastro-intestinal conditions, will more than likely have been seen by the dermatologist, by whom all other therapy will have been tried. Otherwise he should be asked for advice.

As a result of all of the above, the physician will have, in most cases, formed some definite ideas as to the causation of the case in hand. If a hay-fever or asthma case, with seasonal variation, he will, of course, first suspect pollens common to that locality. Many such lists are available from the different firms furnishing these proteins for test and therapy. Should the case be one of fall and winter asthma, with a history of frequent head colds which are generally followed by an asthmatic attack, then the nose and throat specialist will probably have reported some facts or anatomical abnormality. If a focus, then bacteria are, naturally, to be first considered. The same holds true of arthritic conditions.

Should the case be one of urticaria, gastro-intestinal type, angio-neurotic oedema, or present a history of milk or some other food acting as a cathartic, then food, and especially those seemingly implicated, should first be considered.

(*b*) *Specific Diagnosis of Allergic Conditions*

The Tests

Many firms manufacture and sell proteins for sensitization tests, and some medical institutions manufacture their own. If a good product, they will keep, according to some writers, as long as four years.[6]

One of two procedures is usual, either intradermic injection or the cutaneous scratch method, although Chandler[6] advocates pricking several times with a needle. While most men admit that the intradermic is probably more trustworthy and is strongly recommended by Andreson[7] and Scheppegrell,[8] the cutaneous is used by the majority because of several drawbacks of the former, as follows:

1. Possibility of infection.
2. Danger of general reaction.
3. Limited number possible at one sitting.
4. Too sensitive.
5. Painful at times.

There have been many suggestions in the past in favor of group protein tests as a mixture of similar pollens, whole wheat or whole milk. This is unsatisfactory, because frequently people will react to say, casein and not to whole milk or to wheat glutenin and not to whole wheat.

The majority at the present time favor individual protein tests and therapy as opposed to the group method. Andreson states that the only absolute test for gastro-intestinal allergy is the dietic one and not the dermal nor intradermal.

Bacterial tests, according to Brown,[9] demand autogenous vaccines rather than stock preparations for results of any value.

In the event of a negative reaction to a protein you strongly suspect, three possibilities must be considered:

1. Omission of causative protein.
2. Possibility of a toxin causing the symptoms.
3. The patient may be in an immune period following an attack.

Repeat several times if you feel strongly as regards certain substances, allowing a fairly long time interval between the tests.

A positive may range from a welt the size of half a dime, or, as in two patients of mine—husband and wife—you obtain a welt the size of a dollar bill and accompanied by constitutional symptoms of marked severity. These welts show what appear to be pseudopodia radiating out from the periphery, due to involvement of the adjacent lymph channels. Whereas most writers demand the appearance of a welt, Shannon [10] considers definite, persistent hyperemia as sufficient for diagnosis and treatment, at least, in children, and cites several cases.

Treatment

This may be directed along several lines as follows:

1. *Removal of the Cause.* This, if possible, is the ideal method but unfortunately is not always practicable; in the case of animal emanations it is usually easy but in the case of a vital food that is incorporated in a vast number of other foods, as milk and eggs and wheat, it is almost impossible.

A drug can usually be avoided and some other used in its place. If you desire to retain the drug however, as aspirin,

then get a C. P. product to rule out impurities as the causative factor. I saw a student at the University of Maryland who had an urticaria like eruption with oedema of the eye-lids following aspirin, without any manifestations however of the toxic effect characteristic of an overdose of the drug.

2. *Removal of Contributary Causes.* In a seasonal asthmatic, send the patient, if possible, to the heart of the city during the pollinating season of the plant affecting his case. Avoid, in winter asthmas, extremes of heat and cold. If an urticaria is present remove agents that might tend to irritate the skin. In a gastro-intestinal type of condition stop irritating condiments as pepper, mustard, alcohol and coffee. Correct nasal defects and remove foci of infection.

3. *Specific Protein.* These in treatment as in diagnosis, are used singly by most men although a few, as Duke[2], advocate group treatment. Because of space I shall say only a few things in a general way here and make no attempt at detail. Chandler[6] states the need of careful work and restraint of enthusiasm very well.

As to pollens: if the treatment is started well before the season, if the tolerance has been raised to a high level and if, as advocated by some, local spraying with the pollen extract has been carried out you should, according to all writers, obtain 80 per cent improvement in 80 per cent of your cases and the most marked aid is in the severest type of case where it is needed most.

Foods. If the offending foods can be found and can be eliminated, results are usually excellent. Desensitization is to be done in such cases only when absolutely necessary; and then, because the factor involved may be a digestive product, results are uncertain.

Animal and bacterial proteins should be eliminated. If this is possible, the bacterial desensitizations are frequently very successful, especially the autogenous ones.[9] The animal proteins are now being tried and some successes have been reported.

4. *Non-specific Protein Therapy is an Attempt to Raise the General Defensive Forces and Frequently Gives Excellent Results.* Bacterial proteins, peptone and even snake venom have been used. Parenteral milk injections are reported on very favorably by many obstetricians and gynecologists as giving good results. I know of a case of asthma in a child, due to a focus in the nose (which is to be removed), that can be stopped in twelve hours by catarrhal vaccine, and will not return for a period of perhaps a month or six weeks. Many chronic asthmas in old people have in our hands given splendid results with stock, mixed catarrhal vaccine.

5. *Drugs.* It goes without saying that no habit forming ones should be used.

Adrenalin is almost a specific so far as immediate relief is concerned, but is of little value from a curative standpoint, although its prolonged use is mentioned by Duke.[2]

In a case showing glandular disturbance, pituitrin, ovarian extract, and thyroid extract are frequently helpful.

Calcium during the intervals between attacks may be used with parathyroid.

In conclusion I should like to say be sure of your dosage, by means of the skin test, always have adrenalin at hand, and never allow your patient to leave in less than an hour. The protein injections are usually innocuous if handled carefully, but severe reactions are not uncommon and deaths have occurred.

Since writing this article, Ephedrin, worked out by Cheng and Schmidt, has been introduced to the profession, and has proven in our hands of the greatest value in many of these cases.

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Walbert Apartments.

EPISIOTOMY*

By J. M. H. ROWLAND, M.D., Baltimore, Md.

For many generations obstetricians have been looking for various procedures to alleviate the pains and distress of labor —and, in addition, they have sought to lessen the mortality

*Read before Baltimore City Medical Society.

rate in the new-born and to prevent the damage to the tissues of the birth canal, which is so constantly an accompaniment of labor. In pursuance of this, we have seen in very recent years the rise and fall of "twilight sleep." We have seen the tremendous impulse which has been given to "prophylactic version." We have seen offered "prophylactic forceps." All of these are intended to lessen pain and reduce mortality and morbidity of labor.

It is my intention to discuss one of the steps of the last-named improvement in obstetrical technique, "Prophylactic Forceps," brought forward by a distinguished obstretrician only a short time ago; *i. e.*, Episiotomy, an old procedure, which seems to have been held in very small esteem in recent years, and which has never, so far as I know, become popular in spite of many attempts to popularize it. In the majority of textbooks it is dismissed with a few lines and some such statement as this: "As the ordinary perineal laceration heals satisfactorily, if properly repaired, nothing is gained by an episiotomy."

It is my opinion that the above statement fails to take into account the fact that perineal laceration takes place as the last act in the process of over-stretching of the tissues of the pelvic floor; *i. e.*, after the uro-genital septum, the transversus perinei, the levator and other tissues of the birth canal are more or less disrupted. All of the soft structures of the birth canal are capable of great stretching and distention, provided this happens slowly and intermittently; but we know that in many cases the tissues are not stretched slowly, many cases of rapid labor or of breech extraction, where labor is terminated rapidly in the interest of the child; or in cases of forceps deliveries, in which delivery is scarcely ever as slowly accomplished as in spontaneous labor; or the most usual situation, in which, after some hours of ineffectual pounding of the head upon a stiff and resistant perineum until all the tissues making up the pelvic floor have been partially disrupted, the head is pushed through an oedematous outlet and over, or, usually, through an oedematous perineum. This is still more true of those cases which, after long labor and beginning exhaustion, pituitrin is given to augment the expulsion forces and finish the labor. It frequently finishes the labor and also frequently finishes the perineum.

Harrar, in an interesting paper on this subject, states that in the New York Lying-In Hospital the incidence of perineal tears in primiparous women is 44 per cent, and it seems to be the general opinion of obstetricians that in nearly one-half of all first labors perceptible damage occurs to the tissues about

the vulva. In multiparous women, more than 10 per cent sustain damage. These figures, if correct, certainly demonstrate a very great amount of damage in what is considered a physiological process. It is true, of course, that many of these tears are quite slight, involving small abrasions of skin or mucous membranes; others are greater, taking in more of the submucous and subcutaneous tissues, both not involving muscular structure. Still others, however, are second-degree tears, involving muscles and fascia; and still others, relatively rare, but occurring all too frequently, are tears involving the whole perineal body, including the sphincter and varying degrees of the rectal wall. These tears, again, are not always, indeed, I may safely say, not usually straight, clean tears, but frequently ragged, sometimes stellate, so far as the vaginal mucosa is concerned, and they do not happen in normal tissues but, frequently, in tissues bruised or oedematous, leaving for repair, very frequently, a wound in which correct apposition of tissues is almost impossible; and, moreover, tissues which it is many times almost impossible to recognize, so badly damaged and distorted are they.

The above statement does not tell the whole story. For the sake of illustration, take a case in labor for many hours, with head on perineum with failing pains—a case which seems just on the verge of completion but the patient just fails—the last half hour—the perineum rigid. The woman is either given something to stimulate failing pains or is delivered by a low forceps. The physician, in either case, is skillful enough to "save" the perineum; *i. e.*, the perineum does not show a break, either on the surface or on the vaginal mucous membrane, and he feels that he has had a successful termination of his case—but, frequently, he has before him a gaping, swollen vulva—and, not infrequently, the anterior or posterior vaginal wall oedematous and bruised, projecting into the vaginal orifice and the perineum in this case, if examined next day (which it usually is not, except by the nurse or midwife), is seen to be quite oedematous and discolored—and if examined in two weeks, is still not normal—and if seen in two or three months, shows unmistakable beginnings of relaxation and descent of the posterior vaginal wall. Indeed, there are authorities who believe that few women deliver a first full-term child without damage, whether or not an open tear is present.

All of the foregoing applies to the mother. The child does not always escape scatheless. Is there anyone present who has not, after a long, drawn-out labor in which the head has been long on the perineum—and even when labor is terminated spontaneously—suffered the very unexpected, embar-

rassing and disappointing experience of delivering a dead child—or, after a forceps delivery, in which careful attempts have been made to save a perineum, has not had the same experience—or, perhaps, in either of the foregoing cases, has delivered a badly asphyxiated child, which seemed to recover and in the course of the first twenty-four hours has had atalectasis or convulsions and died. (Of all autopsies on newborn children, cerebral hemorrhage is found in nearly one-half.) So that, not only may one have the mortification of a dead child to bear, but have been forced at the same time to repair a rent in a perineum damaged almost beyond recognition, and this, too, when he has been practicing as good obstetrics as he knows and following what he believes to be the general practice of his professional brethren.

It was after many such experiences in my own practice and the observation of cases seen in consultation, that I began to practice more frequently the procedure known as episiotomy, which I had rather infrequently and rather timidly used for many years. I say timidly, because in most of the cases in which the procedure had been done by me, the tissues had not been incised to as great a degree as is necessary if tears and serious damage is to be avoided, and it was not until De Lee's article on *"Prophylactic Forceps"* appeared that I began to practice a more extensive incision. I have been so gratified with the results that I have been impelled to present this paper. It would seem that any procedure, which saves much of the destruction of the perineum, much postpartum morbidity, and some of the mortality and morbidity on the part of the infant, should be desirable; provided it could be shown that it really does produce such results and that the procedure is itself without harm.

Further discussion of this paper is better, perhaps, in conjunction with some illustrations which I want to show you.

In Figure (1) you will see a normal vaginal outlet in the nulliparous woman.

Figure (2), taken from De Lee's textbook, shows the perineum distended to the point where further stretching will either overdistend the structures in front of the head or tear through the perineum.

Figure (3), taken from De Lee's textbook, shows the various kinds of episiotomy—bilateral, median and medio-lateral.

Figure (4), from De Lee's textbook, shows the diagrammatic representation of the tissues cut.

Figure (5), from De Lee's textbook, shows the repair of the De Lee incision. My own custom is to make the incision parallel to (3), but 1 to 1½ cm. to the left of the De Lee

incision; *i. e.,* the upper end of the incision would not start in the middle of the posterior commisure, but 1 to 1½ cm. on either side of it.

Figure (6) shows the incision in the position in which I usually make it. Note the distance from the anus. You will note that the cord which is lifted over the abdomen practically hides the vulva opening and the only gaping is in the episiotomy wound.

Figure (7) shows an episiotomy wound on the fourth day. Note how well the normal contour of the perineum is preserved.

Figure (8) shows another result on the eleventh day. Note that the sutures were allowed to remain too long, a rather common mistake in perineal repair.

FIGURE 1

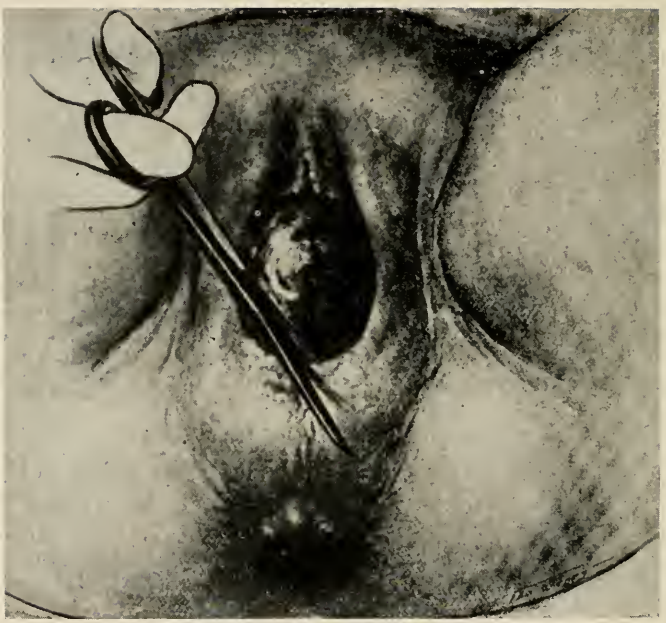

FIGURE 2—(DE LEE)

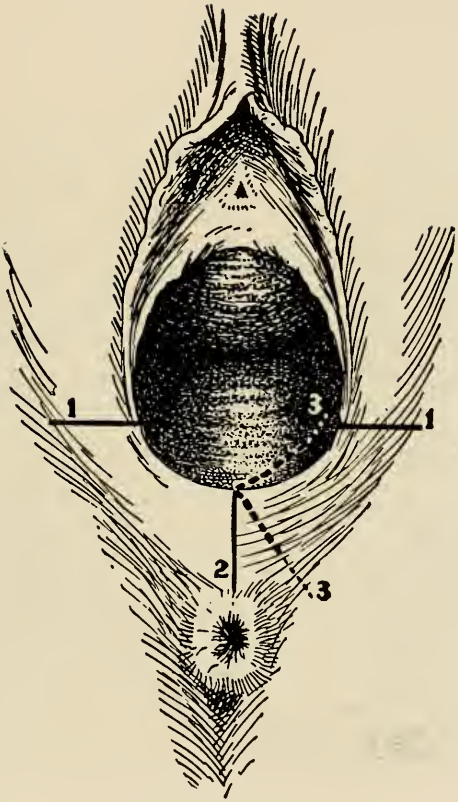

FIGURE 3—(DE LEE)

1, 1, The bilateral; 2, the median; 3, 3, the mediolateral, recommended by author. A radial incision may be made anywhere between 1 and 2.

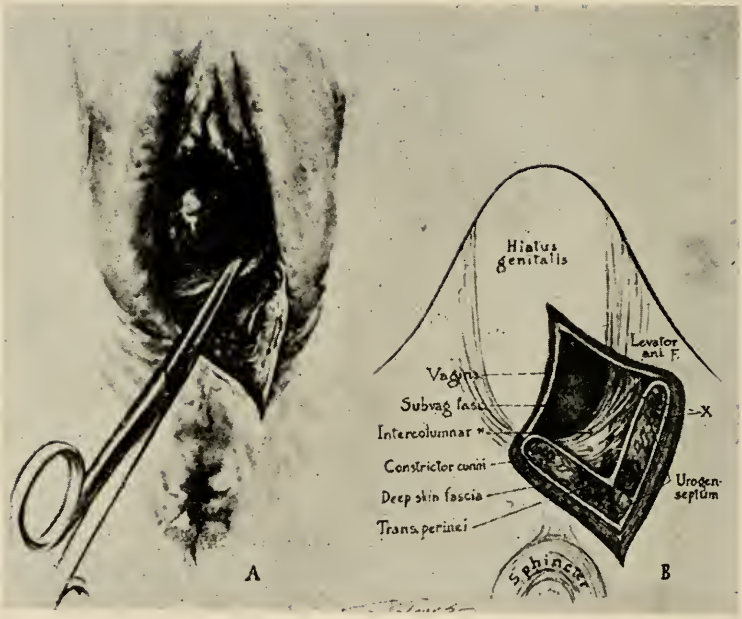

FIGURE 4—(DE LEE)

FIGURE 5—(DE LEE)

FIGURE 6

FIGURE 7

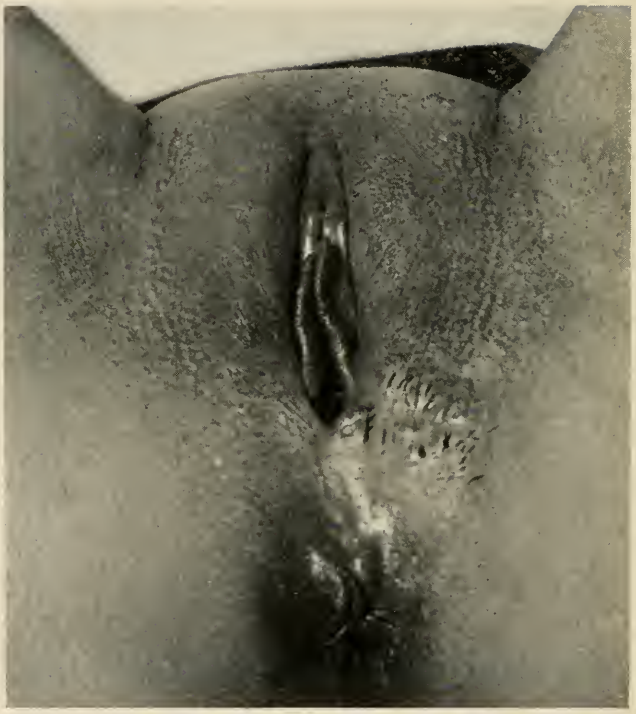

FIGURE 8

Now, what objections may be raised? First, the usual objection that no one can tell whether or not he is going to have a tear. There is, of course, something to this objection, but really very little. I think that all those who have had considerable obstetrical experience will claim that they can usually predict almost with certainty that a head cannot be born in a certain case, without much over-stretching of the pelvic floor and, almost as certainly, they can predict a tear. It is true that the earlier in the second stage we attempt a prediction, the less certain we are to be right but most men with experience learn to certainly predict a tear in plenty of time to avoid severe laceration. In the episiotomy as practiced by De Lee in his "prophylactic forceps," it would be, of course, still harder to predict, as there is no distention when he begins his forceps delivery. I am not willing to subscribe to the correctness of his procedure, either in the hands of the expert or the ordinary practitioner, either in a hospital or out of it, unless other indications than described by him are present.

A second objection is that even if a tear occurs, it may be repaired. This is true. It is the practice among all men who practice modern obstetrics to repair injuries to the birth canal at the time of occurrence. But what a different problem do the two cases present! If one has a tear in the median line of the second degree down to but not including the sphincter, you have a complete tear of the uro-genital septum, a complete tear of the transversus perinei muscles, a complete disruption of the median raphé, bruised, lacerated, oedematous tissue, the perineum is disorganized and all of the disorganized tissue is in direct proximity to the anus and a damaged rectal wall. If the tissues are recognizable, they are often beyond satisfactory repair and when one does the best he can with such a perineum, he frequently finds on the fourth or fifth day his sutures beginning to pull out, union unsatisfactory and a gaping vulva. The only thing that can be said about it is that the final result is sometimes better than you had thought possible during the puerperium.

In the case of the episiotomy, the tissues to be repaired are the edges of a clean incision, undamaged or very slightly damaged tissue, uro-genital septum only partially divided, transversus perinei frequently not distended but cleanly cut through—edges of fascia and cut surface of muscle can be correctly apposed. There is no oedema, there is no need for constriction of tissue in an attempt at proper apposition and the union is a success on the third or fourth day, the wound healing by primary union and, so far as I have observed, the usual relaxation and rectocele so commonly seen do not occur.

I have been asked about hemorrhage. Only once have I had to tie a vessel in the wound—a moment's firm pressure stops the bleeding or, if any oozing continues, it is readily controlled by the sutures. Catgut in the vagina, catgut buried in the wound and for the skin, silkworm gut. Catgut may be used throughout.

There are cases in which the operation of episiotomy are justifiable before distention of the perineum occurs; for instance, in a serious cardiac case, particularly in a primiparous woman. In such a case, no bearing down on the part of the patient should be allowed; *i. e.*, the second stage should be without strain on the patient. As soon as complete dilation of the cervix is present, a rather wide episiotomy is done. Ironing out of the perineum in these cases is frequently a difficult job and sometimes impossible. After the episiotomy, the hand is introduced and the patient delivered by version and breech extraction with much less shock than that caused by delivery with forceps. The same situation might arise in any patient weakened by disease, in which the relief of the distress of the second stage of labor is imperative.

After a thorough trial, I am satisfied that it does no harm but an infinite amount of good—saves much morbidity in the mother—and some of the mortality and morbidity in the child. Its rather general adoption by the general practitioner, as well as the specialist, would greatly benefit a large percentage of obstetrical patients.

THE PROVINCE OF THE GENERAL PRACTITIONER

By John E. Legge, M.D., Baltimore, Md.

We are hearing a good deal nowadays about the "passing of the general practitioner." Like the Dodo, the Ichthyosaurus and the Mastodon, he seems doomed to extinction. If this is about to be true of the general practitioner—as we know it is true of the one-time picturesque members of our local fauna, can his coming disappearance be attributed to the same cause that brought about their extinction—that is, failure of adaptation to their environment? When we come to pursue our parallel a little further we see that the present day general practitioner is facing many of the same problems which overwhelmed the Ichthyosaurus some fifty thousand years ago. Chief among these is change and diminution of the food supply—variation in the standard of living. The succulent small creatures upon which the prehistoric lizard feasted for so many æons, at length became scarce; they got wary and departed

for regions inaccessible to the huge bulk of their enemy; by specializing in rock-scaling, tree-climbing and burrow-digging they evaded his clutches, and by virtue of becoming smaller and livelier they survived while he perished.

In the same way the rapidly mounting cost of living has driven men out of the broad field of general medicine into the narrow city-lots of specialization, where the work seems easier, the financial returns are unquestionably greater, and the applause of the multitude more easily obtained. Of the social and economic conditions which have fostered this change in the attitude of medical men toward their chosen profession, I do not intend to speak at length, because I am concerned, not with those who have abandoned general practice to limit themselves to some special branch, but with those who are still representative of that rapidly vanishing species, *medicus familias*.

What is the province of the general practitioner?

Is he now to be relegated to the position of a "puller-in" for the various specialists, like the "barker" whose function is to direct the attention of possible patrons to the side shows of a county fair?

Is general medicine to be looked upon only as a "stop-gap" between the medical school and the specialist's office, or as a refuge for the incompetent, to be carried on only by those who are too old to learn new tricks, or too slow-witted to compete with the men of greater ability now crowding the specialties? If we are to believe some of the pessimistic discussions which so frequently appear in the press—lay and medical alike—we will soon come to visualize the field of general practice already left to the hands of such inefficient cultivators alone.

Fortunately this has not as yet come to pass. The general practitioner is still the backbone—if he can no longer be reckoned the brawn and sinew—of the medical profession; for without him the whole body would collapse.

Though the doctor of the old school, so touchingly pictured by Ian MacLaren, may have gone the way of the tallow dip and the "horse-drawn shay," the family medical adviser still plays his part in both urban and rural communities, and the vast majority of the inhabitants of this country never come in contact with any other physician. It is with his assistance that most of our fellow citizens make their initial appearance among us, and he is usually among those present when they make their final exit.

Several eminent obstetricians presided over the arrival of Miss Pauline Longworth, and nine noted specialists saw McKinley draw his last breath, but little Tommy Jones, who will do the voting tomorrow, and old John Smith, who did it yesterday, come into the world and go out of it with no more illustrious medical attention than that of Doctor Brown, who lays claim to no other disarrangements of the alphabet behind his name than just plain M. D.

The province of the general practitioner then, is as wide and all-embracing as life itself—a large order indeed, and one which very few of us are qualified to fill—but it is to be remembered that in this, as in most other mundane matters, we cannot hope to attain perfection; we can only strive to approximate the ideal as nearly as possible.

Like St. Paul, the successful general practitioner must be "all things to all men," but to do this successfully he must start with the best theoretical equipment he can possibly obtain, and must, from his first day of practice to his last, be on the lookout to increase his store of wisdom by practice and experience—yes, and by the making of mistakes and by correcting them. Most of all he will learn by teaching others, for the opportunities which come to him as a preceptor of youth, as a moulder of public opinion, as a general guide, philosopher and friend to the whole community are among the greatest ever offered for broad and invaluable social service.

It is evident that the *ideal* general practitioner is a man above instead of BELOW the average of ability, that to be successful in the fulfillment of the functions of the position which he has sought, he must possess a generous amount of wisdom, skill and *good plain horse sense.*

Gone is the old-fashioned country doctor—and rightly so—for there is no more reason why a man who chooses to exercise his talents in general medicine need persist in the ways of his ancestors, than that he should be compelled to live in a house without heat, plumbing or electric lights. But the SPIRIT which animated the old-fashioned doctor need not depart from his present-day successor any more than the spirit of home must forever desert the house which no longer depends upon the hearth fire for its only means of warmth.

Such a physician should be thoroughly well-grounded in the theoretical side of medicine; he should be acquainted with modern methods of diagnosis and treatment; he should keep abreast with the trend of thought among his professional brethren, even though he may be geographically separated from them; and he must ever keep with him the consciousness that he is the chief guardian of the community's health and welfare.

In the words of Frank Billings:

"The general practitioner who is essentially the family physician, is the most important factor in the practice of medicine. In any plan which may be made for the improvement of medical practice, domiciliary visitation must be considered as a necessary fundamental prerequisite in the conservation of health and in the treatment of the sick and injured. It is fundamentally necessary that intimate relations must exist between the physician and the patient, this intimacy the family physician possesses."

If this intimate access to his patients' minds and hearts is added to a good working knowledge of modern methods, a mind alert to observe, analyze and estimate the importance of the phenomena presented to him, and an adequate grounding in the principles upon which medical science is based, he has a combination hard to beat, and is entrenched firmly in the position from which the specialist can never hope to dislodge him.

Two of the greatest problems attacked by modern medicine are the conquest of cancer and of tuberculosis. In both these conditions early recognition is of prime importance, and they are but typical of many others toward which public attention has not been so frequently directed. Early recognition is possible only to the ordinary practitioner, for the only time the specialist can accomplish this is when he is looking for something else. And such accidents seldom happen. Sir James McKenzie, the noted Scotch clinician, has set forth very vividly how great a part the earliest observer may play in the understanding and final conquest of disease. As disease manifests itself chiefly through what we term symptoms, the understanding of the nature and significance of these symptoms becomes of paramount importance. The greatest need for such knowledge is in the very earliest stages, when the only signs are vague feelings of ill health, which are in evidence long before any functional damage, or even definite physical signs have had time to take place. Doubtless, some of the most illuminating phenomena of disease are in evidence when no method now known to us can detect functional perversion or structural change, revealing themselves only by the subjective sensations experienced by the patient. MacKenzie believes that these can actually be classified, according to the mechanism of their production, into structural, functional and reflex groups, and makes the almost unbelievable statement that there is not a single sensation which man is capable of experiencing that has, as yet, been thoroughly investigated. Moreover, the study of the effect which the cause of a symp-

tom has upon the patient's life cannot fail to throw light much needed upon the question of prognosis, the very "foundation of the intelligent practice of medicine."

He adds: "It seems manifest that if symptoms are ever to be properly valued it can be done only by those who have the opportunity to watch the individual through long periods of time, who see the disease at its earliest stage, or even before its inception, and who can observe its progress through all its vicissitudes of life."

And to whom is this possible beside the family physician?

To the general practitioner also, comes the opportunity of "trying out" and approving or discarding most of the new therapeutic instruments which are continually being put forward. His hand is more potent than any other, to place a restraining curb upon the medical hobbies which his specializing confreres are continually riding at full gallop, while he may at the same time make good use of all the new ideas which can serve his purpose, from psychoanalysis to glandular extracts. Many a country doctor whose armamentarium consisted of a lancet and a bottle of calomel, successfully applied the methods of Freud years before the Viennese psychiatrist ever saw the light, and even the humble veterinary has long been cognizant of the potency of the internal secretions, and handled his bovine and equine patients in accordance with the technique so ardently set forth by Mrs. Atherton and other pseudo-scientific writers. Not the least of the general practitioner's obligations is that of "soft-pedalling" the ardor set up in the minds of his patients by the present day exploitation of so-called "medical discoveries" in fiction, movies and the daily papers.

To sum up I will again quote Billings, as the "obligations and responsibilities of the general practitioner to the community he serves."

The family physician is responsible for the safe and sane treatment of the family in illness and injury, and it is his duty to preserve individual and community health. His general education must be broad, as he counsels and advises the family in regard to all problems which concern it in relation to individual and general hygiene, public sanitation, education, community obligations and responsibilities, and their care in sickness and injury. He must guide and safeguard the expectant mother; he must be able to give the best advice and management in the care of the infants and children. This implies a practical knowledge of modern infant and child welfare work. He must understand the principles of psychology so that he can recognize psychopathologic conditions in childhood and

adult life. He must be well trained in diagnostic methods and generally able to recognize existing morbid conditions by physical examinations, and to apply simple functional tests. If he has been properly trained and educated he will command a selected few tested and tried pharmacological products which he will be able to use with skill and usually with great benefit to the patient. He will understand asepsis and be able to perform minor and emergency surgery and especially manage fractures of bones and uncomplicated joint dislocations with confidence and ability. But especially "his long acquaintance with families will enable him to trace the beginning of pathologic changes and apply the proper management and treatment while the condition is remediable."

The general practitioner may be disappearing, but it is not because his province has vanished. If he should go, there will be no one to take his place, and though the community may be compelled to do without him, unless its eyes are opened to the advisability of making his lot worthwhile to induce him to stay, and to the next generation to follow in his footsteps, it will find itself far poorer financially as well as spiritually, and will realize—perhaps when it is too late—that the diagnostic clinic and the overcrowded hospital can never contribute an equivalent of what he gave so unstintingly for the advancement of public welfare and the cause of common humanity.

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SURGERY AND SURGEONS OF THE UNIVERSITY OF MARYLAND IN 1821

(A View from the Notebook of J. B. Wells, a Student of That Year)

By Alexius McGlannan, M. D.

To study the history of Medicine from the notebook of medical students would be a fascinating occupation. All that survives of the *History of Medicine* prepared by Menon, the pupil of Aristotle, is a papyrus fragment containing the notes of a student in Alexandria made on lectures delivered nearly 200

years after the author's death. The History recorded among other things a feeding experiment which seeks to account for changes in the weight of a living animal. The notebook of this long forgotten student therefore shows the earliest record of an attempt to apply exact measurements in tracing known physical laws in biological phenomena. (Singer, *The Evolution of Anatomy,* Knopf, p. 22.)

Doctor Harry Friedenwald has come into the possession of a notebook of John B. Wells, medical student in the University of Maryland in 1821. Wells' book contains, along with other items, notes on the course in Surgery given during the session of 1821-'22 by Doctor John B. Davidge, who was then serving his last term as Dean of the Faculty. The lecture notes have been transcribed in neat handwriting on one side of the page, while the other side contains notes and observations made at various times by Doctor Wells after his graduation as well as during his student days.

When young Wells came from Annapolis to study medicine, the Medical School of the University of Maryland was a flourishing institution, and had just escaped its greatest peril. The land on the western border of the city had been obtained from Colonel John Eager Howard, who not only sold it at a low price ($10,000) on credit to the professors in trust for the Regents, but contributed one thousand dollars to the funds of the University.

Doctor William Howard, son of this first patron of the University, graduated from the Medical School in 1817, and was successively Demonstrator and Adjunct Professor of Anatomy from 1818 to 1821. Later he became Professor of Natural Philosophy in the Academic Department of the University.

R. Cary Long's imposing building, modeled after the Pantheon, had been occupied for eight years. The building was the pride and admiration of the City of Baltimore. It was then the finest structure devoted to medical education to be found in the United States. Today it is the oldest building still occupied for that purpose. Standing in the portico, student and professor looked out between the Doric columns, over the brick wall which surrounded the yard, to view an extensive prospect down the Patapsco and Chesapeake.

The splendid anatomical hall and the extensive convenient dissecting rooms attached thereto (*Medical Recorder,* Phila., 1821) had been completed, and Practice Hall, an unattractive but substantial brick building, had been erected on the eastern part of the lot to accommodate the anatomical and pathological collection purchased from Granville Sharp Pattison, the new Professor of Surgery.

The small classes that marked the years of the War of 1812 had been succeeded by a steady increase in the number of students, so that in Wells' years there were approximately 300 in the Medical School.

During the War period, importunate creditors, principally mechanics, brought the Institution to a crisis in which it was threatened with sale by the sheriff.

The professors averted this calamity and at the 1821 session of the Legislature their urgent financial anxieties had been relieved by a loan of $30,000 from the State of Maryland. (Cordell, *The University of Maryland,* Vol. 1, p. 53.)

There was kindness and harmony among the Medical Faculty. The prospect of mutual benefits produced mutual forbearance, whilst honest differences of opinion were disregarded or easily conciliated. (Potter, *Account of the Rise and Progress of the University of Maryland,* Baltimore, 1838, p. 14.) The disagreements which led to the supplementary charter and reorganization of 1825 were not evident.

Wells' notes on Surgery may be on one of the courses which led to this serious disagreement and division of the Faculty. To understand the situation it becomes necessary to review the career of John B. Davidge as it concerns the origin and development of the Medical School.

John Beale Davidge was born in Annapolis in 1768. He received the degree of Master of Arts from St. John's College in 1789. His first study of medicine was as a pupil of Doctors James and William Murray, of Annapolis. He entered the University of Edinburgh, but graduated from Glasgow in 1793. After a short period of practice in Birmingham, England, he brought his young Scotch wife (born Stuart) to make their home in the newly chartered City of Baltimore during the summer of 1796. This was a time of yellow fever epidemics and we find Davidge in the thick of it as well as in the discussion of the disease which was carried on in the newspapers. The itch to teach was on him and in 1802 he began to advertise private courses of lectures on Anatomy, Surgery, Midwifery and Physiology. In 1801 the Medical and Chirurgical Faculty of Maryland, then in the second year of its existence, received from a distinguished member a plan for the erection of a Medical College in the State. That Davidge was in the movement was shown by his presence on the committee appointed in 1802 for the study of the proposed Medical College.

In 1806 Doctor James Cocke came from Virginia, to settle in Baltimore, and joined Davidge and John Shaw in their plans for establishing a Medical School.

Davidge joined Cocke and Shaw in giving a course of medical instruction in the autumn of 1807. He taught Anatomy, Surgery and Obstetrics, meeting his students in a small building which he had erected adjoining his office on the east side of Liberty near Saratoga street. Here in November of that year he secured a subject and began a dissection.

Popular prejudice against dissection was strong. These were the days when Baltimore was Mobtown (John R. Stidman, *Evening Sun,* Feb. 2, 1926.) The assemblage of a few boys before Davidge's class room soon accumulated a mob, and for the second time in the history of the city the offended populace demolished a house and its contents to show its opposition to dissection of the human body. Adverse popular opinion was so strong that Davidge could obtain no redress for the damage done him. But one public protest was made against the outrage and that one probably came from Doctor John Crawford.

The medical profession, however, was stimulated by the violence and no time was lost in preparing the charter which passed the Legislature December 18, 1807, founding the College of Medicine of Maryland. On December 28 Davidge and Cocke were made Joint Professors of Anatomy, Surgery and Physiology, Davidge was elected Dean of the first Faculty, and the professors of Anatomy and Chemistry had already commenced their lectures. At once Davidge added to his other courses, that of the Institutes of Medicine, made vacant by the resignation of William Donaldson.

With a valiant spirit the College began its career, having seven pupils. The professors held classes in their respective homes. A year later they braved the vicissitudes of a dilapidated frame school house at Fayette street and McClellan's alley. "During the intensely cold winter every morning the professor of Anatomy found his subjects frozen or covered with snow or ice, and finally was compelled to suspend his course because of an attack of pleurisy." (Potter.)

The corner stone of the new building at Lombard and Greene streets was laid April 7, 1811, and the building was partly tenantable on the last Monday of October. On the day when he was to have dedicated the new building by his introductory lecture, Cocke died. Davidge gave up the chair of Institutes and assumed the double duty of teaching Anatomy and Surgery. (Potter, pp. 9 and 10.)

In 1812 Doctor William Gibson became Professor of Surgery, and Davidge continued in Anatomy. In 1820 Gibson went to Philadelphia and once again under trying circumstances Davidge became Professor of Anatomy and Surgery.

How urgent were the financial straits of the Medical School when the Legislature voted the loan of $30,000, may be judged from the following extract from a letter of David Hoffman, late Professor in the Law School to the Medical Faculty.

"In 1821 the Institution was at its lowest ebb. Professor Davidge occupied two chairs; the number of students did not exceed 60; a heavy debt of at least $38,000 hung over it. Executions to the amount of nearly $6,000 were then pending. The buildings, which had never been finished, were in a state of gloomy dilapidation, and a heartlessness and despondency prevailed through the Institution to such a degree that Professor De Butts, with much feeling, informed me that after we had been visiting the buildings, that it was probable the Institution could not last more than another session unless something could be done to rescue it from its peril. He asked me what could be done. My brief reply was: 'Go further in debt; get Doctor Davidge to resign one of the chairs, appoint an able Professor to supply the vacancy, repair your buildings, erect a new building for a class room, etc.' "

The loan of 1821 made possible the physical changes recommended, and Davidge stepped aside to make room for Granville Sharp Pattison, a quarrelsome Scotchman, who was elected Professor of Surgery in September, 1821. Pattison brought with him the much-advertised anatomical collection of his late master, Allan Burns, which he sold to the Faculty for $8,000. The session of 1821, therefore, opened with a flourish, all of Mr. Hoffman's recommendations having been put into effect.

In Potter's account we read "that while Pattison acquitted himself honorably, and with great satisfaction to the class, it was manifest that anatomy was his favorite pursuit, and would have been preferred in the first instance. After great deliberation and much discussion, he was installed into the chair of his choice." If such a change was made Davidge must have made another change and taken up the teaching of Surgery. At any rate we find him taking on both Anatomy and Surgery in 1826, when Pattison left Baltimore for London.

In 1827 Davidge for the last time gave up the chair of Surgery. This year he handed it over to Nathan R. Smith. In January, 1829, Smith took over the final course in Anatomy for his dying colleague. Davidge died in August, 1829. Among his famous cases is one of ligation of the carotid artery for fungus carcinoma of the antrum. The curious coincidence, so often noticed, occurred with him—he died from a fungus carcinoma of the antrum.

Davidge had always been in the habit of taking students for private extra mural courses. These courses were very popular and attracted a large number of students. Other members of the Faculty objected to the classes, which were defended by Davidge and De Butts, the Professor of Chemistry. The Regents in 1824, after hearing both sides, decided "that no professor should, during the session of the classes, deliver any lecture to the pupils of the College and receive compensation therefor, except officially *ex cathedra*." This decision offended Davidge and De Butts, who felt that it restricted their rights. To gain redress they set on foot the movement which led to the supplementary charter of 1825, taking the school away from the Regents and putting it under a Board of Trustees appointed by the State.

Whether or not Wells' notes are on Davidge's private course, or on a course given in place of Granville Pattison's, I can not determine. The index to the notes gives the following headings: Notes on the Arteries; on the Brain; Nerves; Medulla Spinalis. Anatomy of the Perineum; On the Secretion and Excretion of Tears; Anatomy of the Tibia; of the Bladder; of the Viscera; Inguinal Hernia; Femoral Hernia; Inflammation; Mortification; Anthrax or Carbuncle; Mammary Abscess; Paronychia or Whitlow; Pooas Abscess; Abscess of the Hip Joint. Only those subjects following Inflammation in the index are found in the bound note book. Twelve pages are required to index the contents of Wells' library. This collection of books indicates that Dr. Wells was a good student of medicine and a cultured man of wide intellectual activity.

Surgery in the University of Maryland, as shown by these notes, was under the influence of the Bells, of Abernethy, Percival Pott and of John Hunter. Inflammation, taught by Davidge, was the inflammation of John Hunter, "not in itself necessarily a disease, for disease uniformly tends to the destruction of a part, whereas inflammation is often necessary to the restoration of an injured part." Among other changes noted in inflammation is, "the diameter of the vessel is enlarged as has been demonstrated by Mr. Hunter on the ears of a rabbit."

"The contact of air to internal surfaces has been supposed to produce inflammation, but we may insist that air is perfectly innocuous."

Then Dr. Davidge goes on, "This was proved by Mr. Hunter and I have made an experiment that led to the same conclusion. I injected air into one of the cavities of the pleura of a kitten and closed up the wound. In this state the animal remained three days without any remarkable alteration. It

was then suffocated and upon examination no difference in the appearance of the two cavities could be observed."

Davidge was given to florid language. His published writings are full of long words, lengthy periods and often violent invective. The following note on the treatment of abscess is worth quotation:

"When the suppuration is completely taken place generally the highest point of elevation will be the proper place for evacuation. When it is effected by nature it is by an absorption of the parts under the skin, but it is sometimes effected by the skin and the parts beneath sloughing away. This stepping aside to give nature the path supposes her to be unerring in her course, but when from the reasons mentioned it is incumbent on us to dispute the road, some precautions are necessary. *First,* Do not open until fluctuation is distinct and then let the opening be on the point of elevation. *Second,* Do not be precipitate when nature is slow, in opening the part under the fluctuation or in using medicines to promote its evacuation."

Many references are made to the use of bark, of opium, of venesection and to different kinds of poultices. Bread and milk and carrot poultices with or without impregnation with dilute acetic, muriacic or nitric acids are advised. Dr. Physie's fermenting poultice made of yeast, honey, flour and charcoal is recommended to correct the fetor of gangrene. On gangrene the notes record:

"Mortification is much influenced by the state of the system, namely in a debilitated state, dropsy, old age, etc. A crepitus is sometimes felt on pressing the gangrenous part, this is only the disengagement of the air generated by putrefaction. Old people are frequently attacked by a species of mortification, commencing in the toes with pain and slight inflammation or sensation of heat in the parts. The skin becomes of a red color and vesication sometimes takes place, but not always. It comes on from the slightest injuries. I have known it brought on by the scratch of a pen-knife in cutting a corn. Often in patients of this kind the arteries of the part have been ossified. A case of this kind occurred to Dr. Dorsey, an old woman in the almshouse. Mr. Pott advises opening in such cases in preference to bark. Here I coincide with him and object to all stimulating applications. Amputation should never be attempted while the mortification is progressing. If it be done the mortification will progress on the stump and death will ensue."

Paronychia or Whitlow, "this is a disease which by neglect is often dangerous." One hundred and five years have not lessened this danger.

Psoas Abscess is discussed at length in the notes. Davidge quotes Abernethy as profiting by Hunter's observations in advising an indirect valve-like opening of these abscesses through skin and fascia. One of Dr. Wells' observations is as follows:

"*June*, 1827.—Examined the case of J. R., Jr., son of Dr. Ridgely confined with lumbar abscess. Many features of this case seem extraordinary, neither the frequent chills, the deep-seated pains of the loin, the great numbness at the top of the thigh, with immobility of the limb which are described as characteristic of the formation of lumbar abscesses, except the pain and some slight intumessence about the hip attended the disease in an appreciable degree. The abscess discharged copiously after the repeated employment of emolient cattaplasms. The character of the abscess was somewhat peculiar in regard to the quality of the retained fluid. The matter was uniform consistent pus without either flocculent curd like masses or the coagulated blood which generally abounds in lumbar abscess. The tumor forms in the groin in this case by the gravitation of matter, did not at all recede by the recumbent posture of the patient. This fact is opposed to the assertion of authors that recession of the tumor in the recumbent posture furnishes an important means in the diagnosis of Psoas Abscess. Doctors Physic and Davidge were consulted in the above case, the latter advising an incision to let out the matter as advised by Abernethy, the former condemning the practice. Doctor Physic's advice was adhered to and the patient improved. Some months after the spine became diseased and the abscess in the groin recurred, which discharged matter for many months, and this in spite of the most approved plans of cure. He died February, 1831. Pott's treatment by vegetable alkali used."

Detailed instructions are given for catheterization of the male. Davidge advised the master's twist in passing the catheter. He advises withdrawal of the stilet when the flexible catheter cannot pass the prostratic curve, or elevation of the tip of the instrument by a finger in the rectum to lift it over the obstruction.

A quotation from Hunter gives the method of distinguishing between hematoma of the scalp and depressed fracture of the skull.

A final quotation from Dr. Wells' observations:

"The history of the world has been rightly denominated the history of a ceaseless train of revolutions, physical, political and moral, ever changing, ever changed. The features and creatures of yesterday are vanishing or vanished today, and

man, proud man, the architect of life, of cities and systems, the founder of nations, the inventor of sciences, sinks by the law of nature to the dust, that dust to which his cities, his systems, and too often his sciences follow him. Creeds of physic, like religions, take their turn. Hippocratists give way to Brownonins, Brownonins to Disciples of Broussais. The Humorists have been routed by the Solodists and at present there appears to be some probability of the Solodists being again dispossessed of their sway by the Humorists. Whilst physic as a whole is submitting to changes, its fractional parts, the cantons or divisions, as it were, of the republic, are also the prey of revolutions. Take for instance the head and the treatment of the injuries to which it is subject. What varieties of opinion and practice have, what doubt and uncertainty, unhappily exist. In the days of Pott, the trephine was in constant requisition, whilst with the publication of the work of Abernethy it has almost grown rusty in its case. Though theories, however, are changing, some now in their decline and some irrevocably fallen, facts still remain."

BULLETIN

OF THE

SCHOOL OF MEDICINE UNIVERSITY OF MARYLAND

PERIODIC HEALTH EXAMINATIONS

One of the most important, perhaps the most important, of modern efforts in the field of preventive medicine is the widely-discussed movement to popularize periodic examinations of apparently healthy individuals. Every practitioner must have been impressed with the relative frequency with which conditions of more or less serious import are encountered in patients whose presenting symptoms would in no way suggest these findings, and who come under examination because of totally different and perhaps very minor disorders. That even presumably healthy individuals often harbor imperfections of many and unsuspected varieties was demonstrated on a vast scale by the medical examinations of the draft boards in the recent war. The regular periodic examinations of individuals in civil life would yield similar results, and the importance of a knowledge of such abnormalities to those concerned is obvious. It might, in some instances, be life-saving.

This, in a nutshell, is the idea behind the present movement for periodic health examinations. It is far more inclusive than any previous educational effort on the part of the medical profession, and its potentialities are correspondingly richer. Those who are campaigning against tuberculosis have been quick to see its possibilities, as have those who are trying to teach the public to recognize cancer in an early stage, those who have been preaching the dangers of over-weight in middle life, and, indeed, those interested in any field of preventive medicine. So important, indeed, has this movement become, that it has been enthusiastically taken up by the American Medical Association, as well as by many of the component State societies. Many of the latter have not only endorsed it, but have taken measures to push the project among their members.

So far as the writer is aware, no opposition has anywhere been expressed to the general idea, although certain cautions have been stressed, and quite properly. For example, it is easily conceivable that an examiner lacking in common sense might make a patient unhappy or even morbid by an indiscreet and unjustified stress upon abnormalities which are often of no great importance, such as certain types of valvular disease or high blood pressure. The American Medical Association has done a valuable service in getting out a "*Manual of Suggestions for the Conduct of Periodic Examinations of Apparently Healthy Persons,*" in which just such questions are discussed. The Association has also prepared an excellent form to be followed in such examinations, as a model, or at least a suggestion, to those making them. The Life Extension Institute, a privately conducted organization working largely in coöperation with some of the large insurance companies, has been carrying on these periodic examinations for quite a number of years, with results that have apparently been reflected in the death rates.

There is not the slightest doubt, however, that the proper agency for the work is the family doctor, and that it can never be really successful unless the physicians of the country get behind it. Ways and means to interest the practitioners of the country in this educational movement are now being widely discussed, and Maryland should not lag behind the procession. It is understood that our House of Delegates has already considered the matter, and it is hoped that it will be vigorously pushed at the next annual meeting. It is a big question, with many ramifications, and the more extensively it is discussed at our medical meetings, the more matured and worth-while will be any plan of procedure which may finally be evolved.

MAJOR-GENERAL JAMES M. MORRISON, CLASS OF 1859

The University of Maryland is very fortunate in being able to secure, through the kindness of Mr. Harry Morrison, a portrait of his father, the late Major General James M. Morrison, together with his diploma, two commissions in the United States Army, one signed by Abraham Lincoln and the other by Andrew Johnson, a sword presented by the Graduating Class of the University of Maryland (1859), and another sword which was presented by his friend, General Custer.

A short chronological sketch of the life of Major General Morrison, furnished by Mr. Harry Morrison, and a letter from Grover Cleveland follow:

MAJOR-GENERAL JAMES M. MORRISON

1838. James M. Morrison was born in Baltimore, Md., May 7, 1838. His early education occurred at Oak Shade, Lancaster, Pa., Harrisburg, Pa., and Baltimore, Md.

1857. At the age of 19 years, he entered the University of Maryland as a student of medicine.

1859. Graduated from the University of Maryland. Age 21 years.

1860. Married June 12, 1860, at 16 South Gay street, Baltimore, Md., at the home of his wife's father.

1861. The Civil War broke out in 1861 and he entered the Union Army as a Surgeon, his first attachment having been with the Fourth Cavalry Pennsylvania troops.

1863. Early in 1863 he sustained an injury to his left eye, which threatened his sight, and fearing the loss of the eye, he resigned his commission and returned to Baltimore to consult his former teacher and professor, the late Dr. Nathan R. Smith, under whose skillful hand the eye responded to treatment and he again entered the Union Army, accepting an appointment the same year as Assistant Surgeon of Volunteers, and later in the same year was made Surgeon of Volunteers and assigned to duty as Chief Medical Officer at Folly Island, S. C.

1864. In March, 1864, he was ordered to proceed to Jacksonville, Fla., and was assigned to duty with General Ames as Chief Medical Officer of the Division. The following month, April of the same year, he was made Chief Medical Officer of the Third Division, Tenth Army Corps. In June of the same year he was relieved from duty with that Division and ordered to report to the Commanding Officer of the Eighteenth Army Corps, having been appointed Surgeon-in-Chief of the First Division.

1865. In February, 1865, he was assigned to duty as Medical Director of the Twenty-fourth Army Corps. At the close of the War this year, he resigned from the Army, only to re-enter again within a few weeks to engage in the Indian Campaign at the solicitation of his friend, the late General George A. Custer, whom he first met on the battle field of Antietam some years previously.

1865-1873. He remained on the plains in Texas, Kansas and Oklahoma until 1873, when he returned to Baltimore, Md., and opened an office for the practice of medicine in the house in which he had been married.

1899. He died at Baltimore, Md., November 13, 1899, and is buried in Greenmount Cemetery.

1899. An abstract from a letter by the late ex-President Cleveland, dated at Princeton, N. J., November 18, 1899, is quoted as follows:

"To most of us who have reached or passed our prime in life, the death of a good friend, the absence of a familiar face, brings a double sense of loss and carries a significant meaning.

"It has been my privilege for many years to have known and admired the many sterling attributes in the character of James M. Morrison, whose early training coupled with an innate culture from gentle parentage, impressed his youth with characteristics of speech and manner that were as charming as indicative of high mental attainments.

"A linguist, whose mind was a veritable storehouse of fact—a philosopher, an insatiable reader of profound philosophy—a historian, a recognized authority in historical lore—a surgeon, with unusual skill—a physician, beaming with optimism—a wit, whose keen sense of humor, linked with his charming personality, won him scores of friends—a gentleman of the old school, tempering the rigors of scientific training and ability with a deep human sympathy.

"The cunning of the politicians was so distasteful to him that he cheerfully accepted a measure of obscurity rather than bow to their arts. Mawkish sentimentality was foreign to his nature. No patient need expect from him other than a full and frank diagnosis.

"I am convinced that he was not afraid to die. The same courage that marked a long and useful life on the field of battle or in the sick room completely imbued his personality in the evening of his life and I am sure that he met death with that calm resolve that characterized him in every problem of his eventful career.

"I wish to extend to you and yours my most profound sympathy. You have lost a loving father. I have lost a great friend. If I can be of any service to you or yours, do not hesitate to command me.

"Very sincerely yours,

(Signed) "GROVER CLEVELAND."

We are very grateful to Mr. Morrison for these objects of such great historical value. It is very desirable that as soon as possible a proper museum for storing such relics should be secured. We know of no institution in Maryland so rich in historic associations and which has played so prominent a part in the life and history of the State as the University of Maryland.

DEATHS

Dr. Henry Vanderveer Davis, North Branch, N. J.; P. & S., class of 1894; aged 69; died, November 26, following a long illness.

Dr. William A. Boylston, Coushatta, La.; class of 1871; aged 84; died, November 16, 1926, of senility.

Dr. John S. Van Keuren, Omaha, Neb.; B. M. C., class of 1901; aged 54; died, November 15, 1926, of streptococcic septicemia following an accidental wound of the index finger.

Dr. O. Victor Limerick, New York, N. Y.; P. & S., class of 1893; aged 54; died, May 11, 1926, of angina pectoris.

Dr. Samuel H. Allen, Salt Lake City, Utah; P. & S., class of 1890; aged 64; died, August 30, 1926, of carcinoma of the pancreas.

Dr. Ira W. Seybold, Poplar Bluff, Mo.; B. M. C., class of 1893; aged 57; died, November 12, 1926, of heart disease.

Dr. Francis J. Snyder, York, Pa.; P. & S., class of 1887; aged 62; died, October 11, 1926, of broncho-pneumonia.

Dr. Luther Peterson Howell, Columbus, Ohio; B. M. C., class of 1893; veteran of the Spanish-American and World wars; aged 61; died, November 22, 1926, of angina pectoris.

Dr. George Herman Hammerbacher, Baltimore, Md.; class of 1894; aged 57; died, October 3, 1926, of heart disease.

Dr. John Erastus Jewell, Moran, Kan.; P. & S., class of 1881; aged 80; died, August 27, 1926.

Dr. Harry A. Snow, Milo, Maine; B. M. C., class of 1893; aged 59; died, April 11, 1926. of pericarditis.

Dr. Thomas Briscoe Hall, Washington Boulevard, Baltimore County, Md.; Washington University Medical School, class of 1873; aged 73; died, December 19, 1926, of paralysis. He was a son of the late Dr. W. H. D. Hall, class of 1833.

Dr. Francis Miles Chisolm, Washington, D. C.; class of 1889; formerly associate professor of opthalmology at his alma mater; served during the World War; aged 59; died, September 21, 1926. He was a son of the late Dr. Julian J. Chisolm, the distinguished professor of ophthalmology in the University of Maryland for many years.

Dr. Harry Butler Brunner, Central City, Pa.; P. & S., class of 1895; aged 54; died, September 20, 1926.

Dr. Alva L. Chapman, Tarentum, Pa.; P. & S., class of 1879; also a druggist; aged 68; died, October 1, 1926, of heart disease.

Dr. Albert H. Carroll, Baltimore, Md.; class of 1907; aged 51; died during the past summer while on a visit to the West Indies.

Dr. Humphrey Singleton Belt, South Boston, Va.; class of 1892; aged 56; died, October 9, 1926, of heart disease.

Dr. Isaac Wayne Mendelsohn, Wilkes-Barre, Pa.; P. & S. class of 1905; aged 53; died, September 14, 1926.

Dr. Luther S. Mason, Clover, Va.; P. & S., class of 1874; aged 73; died, October 14, 1926, of exhaustion following acute gastritis.

Dr. James Willett Spalding, Hillsboro, Texas; P. & S., class of 1884; aged 73; died, November 16, 1926, of cerebral hemorrhage and pneumonia.

Dr. George L. Duane, Baltimore, Md.; B. M. C., class of 1896; aged 52; died, December 31, 1926.

ALUMNI ASSOCIATION ACTIVITIES

"A SCHOOL IS NO STRONGER THAN ITS ALUMNI MAKE IT"

During the World War the Medical Alumni Association, as all other activities at the University of Maryland, became more or less disrupted and gave way to the war activities. To all intents and purposes, it was a memory of the past, had fulfilled its purposes and was dead. With the reorganization of the Medical School, new problems arose, problems which vitally affected the alumni, problems which could only be solved with the help of the alumni. Accordingly, the dean of the Faculty of Physic, Dr. J. M. H. Rowland, issued a call for a meeting to be held in Chemical Hall, University of Maryland, Lombard and Greene streets, Baltimore, April 14, 1921, for the purpose of reorganizing the Alumni Association. On this date about thirty alumni met at the designated place with Dr. Rowland as temporary chairman and elected the following officers, Dr. J. B. Schwatke, President, and Dr. Nathan Winslow, Secretary, to bridge the gap until the annual meeting, which took place May 30, 1921, when Dr. Schwatka was re-elected president for the ensuing year. Since its rebirth your Association

through its officers, has wielded a potent influence in University affairs. As an evidence of its confidence in the Association and in its desire to unite in closer affiliation the Alumni Association with its Alma Mater, the Faculty of Physic has granted to the Alumni Association the privilege of naming two of its members on the Hospital Council, two representatives on the Alumni Council—an organization made up of two delegates from each school of the University of Maryland—and two members on the editorial board of the *Bulletin*.

Since the reorganization of the Association, your officers have made an energetic campaign to reach and to invite every graduate of the merged schools (College of Physician and Surgeons, Baltimore Medical College and University of Maryland) to renew their membership. The response has been most gratifying, 1,500 names being on our rolls at the present time.

Of the money paid in as dues after deducting the necessary expenses for running the organization, $600.00 has been appropriated for an additional number of the *Bulletin*; and $300.00 toward the review course for physicians. This course costs ordinarily $25.00 to each person taking it, but any member showing receipt card from the Alumni Association is entitled to participate in this course without charge.

Your Association, through its members, raised $1,200.00, not coming from dues, toward re-equipping and modernizing the X-ray Department.

We have spent many hundred dollars in an educational campaign throughout the State of Maryland, to bring home to the people the needs of the Medical School and the University Hospital.

We have celebrated each year on December 18th, the birth of our University, which was founded in 1807 by an act of the Maryland legislature. At the last several meetings of the Southern Medical Association we have held a reunion for our alumni in attendance. These reunions have been enjoyed most thoroughly by all attending and have stimulated renewed interest in our school. All who attended the reunion just held in Atlanta will always hold the occasion as one of their most cherished memories. The successful outcome of this affair is entirely due to the efforts of Dr. C. W. Roberts, of Atlanta, an alumus who is a credit to his alma mater. We are preparing now for a big get-together at the next annual meeting of the American Medical Association to be held in Washington the coming spring. Be sure to come up to headquarters, make yourself known and register for the banquet. This office is in charge of a paid secretary, who is now actively engaged in compiling indices of our alumni.

Last, but not least, the Board of Regents, in cooperation with the Alumni Association, appointed a committee of five to survey the various departments and to make such recommendations as might be beneficial to the Medical School. It is gratifying to announce that in its furtherance of this mandate your committee received the most courteous treatment and earnest cooperation from all heads of departments, and after a most thorough investigation found the School fulfilling all of its duties conscientiously and giving high-grade training of which no alumnus might be ashamed.

The Alumni Association has given freely of its advice and resources to place the School upon the highest level to attract the highest type of students. If one-fifth of our living alumni can accomplish so much of good, what might not be possible if the School had the backing of every living graduate? It is placing too great responsibility on the shoulders of those willing ones to require them to carry the whole burden. We solicit you, our brother alumnus, to enlist as an active member. We need your help, in the words of Kipling:

"It ain't the individual,
Nor the army as a whole,
But the everlastin' teamwork
Of every bloomin' soul,"

that counts.

BALTIMORE MEDICAL CLUB OF NEW YORK

The Baltimore Medical Club of New York City held its autumn meeting at the Hotel Commodore, Lexington avenue and Forty-second street, New York City, on Wednesday evening, December 8th, 1926, at 7 o'clock.

The guests of the evening are Dr. J. M. H. Rowland, Dean of the Medical Faculty, University of Maryland, Baltimore, and Dr. Wendell C. Phillips, President of the American Medical Association.

This club consists of graduates of the medical colleges of Baltimore residing within the metropolitan district, which comprises New Jersey, Connecticut, Long Island and New York State within a radius of sixty miles.

The officers of the club are:

DR. DAVID E. HOAG ---------- *President*
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DR. L. WINFIELD KOHN,
Chairman of Committee on Attendance and Publicity
DR. J. MORLEY HITZROT____*Chairman of Reception Committee*

Wanted—P. & S. Catalogues

The file of P. & S. catalogues at the University is very incomplete, especially the issues prior to 1900. Almost daily inquiries which can only be answered by referring to these catalogues must remain unanswered. Those of you having such in your possession would be conferring a much needed gift upon the University as well as an invaluable addition to the University archives by forwarding them to the dean, Medical School, University of Maryland, Lombard and Greene streets, Baltimore, Maryland. The *Bulletin* takes this opportunity to thank in advance those of you helping to remedy this deficiency.

Addresses Wanted

Any information about these men will be much appreciated. They are lost to us and with the sources at our command we are unable to locate them.

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UNIVERSITY OF MARYLAND

A Tribute

We cherish your traditions. Our delight is in your achievements—your history. We honor and revere the memory of your founders, and of those that followed afterwards, in line, until this day. We plan for your further growth, and build for another century.

WILLIAM J. TODD, 1889.

The Alumni Association,
Department of Medicine,
Founders' Day,
December 18, 1926.

BULLETIN

OF THE

SCHOOL OF MEDICINE

UNIVERSITY OF MARYLAND

VOL. XI APRIL, 1927 No. 4

TREATMENT OF SYPHILIS IN THE UNIVERSITY HOSPITAL DISPENSARY

By HARRY M. ROBINSON, M.D.

We hold a brief for our plan of treatment, because, experimentally, we believe that it works as well as any type of treatment attempted, and with less ill effects. There are two types, or plans, of treatment—the very intensive, or Pollitzer method, and the lesser intensive, advocated, mainly, by Fordyce, but consistently used by us in the earlier years of arsphenamine therapy.

While there are four drugs used in the modern treatment of syphilis, namely, mercury, arsphenamine, iodid and bismuth, we are, at the present time, principally concerned in the use of arsphenamine (or its products) and bismuth.

Mercury

We have temporarily discarded mercury for several reasons, as follows:

Mercury, however administered, particularly by injections, is frequently damaging to the kidneys, besides being stored up and occasionally explosive in character.

By mouth, mercury tends to tolerance or drug fastness, besides laxity in therapy.

Regarding inunctions, there are three or more points to be considered against this method.

1. It is a very messy type of treatment, and very frequently causes local dermatitis.

2. The dosage, or absorption amount, can never be assured, regardless of the masseur.

3. Even if the patient were conscientious in applying inunctions, one can never tell when a patient has a sensitization or intolerance to mercury, and, therefore, whether under vigorous rubbing, any of the drug is being taken up.

4. We have found, in the last fourteen years, that very few patients are conscientious in the following out of inunction therapy.

Regarding the intra-venous therapy. Mercury is so rapidly execreted that it is only applicable in a very few cases, and requires the administration to be given at least three times a week, necessitating loss of time from the patient's work.

Intra-muscular injections of mercury.

Of the insoluble salts, none are painless; practically all of them are much more painful than any bismuth salt. In addition to this objection, the explosiveness of the stored-up mercury with damage to the kidney must also be kept in mind.

Bismuth

Since 1922, following the work of Levaditi-Sezerac, bismuth has come to be regarded as a definite aid in the armamentarium of the syphilologist. It has been found, personally, and in the various reports, that bismuth is more effective therapeutically, less explosive, less irritating, and less painful than mercury. Besides, as it can only be given by intra-muscular injection, it assures one that the patient will receive regular treatment or his delinquency noticed.

The first bismuth preparations used were *Trepol* and *Neo Trepol*, which have been discarded because of their slow absorption and the painfulness accompanying the injection. Bismuth oleate has been discarded because of its lower therapeutic index. Roughly speaking, there are about three, easily obtained and effective, bismuth compounds on the market, all of which are administered in oil, preferably a vegetable oil. These are:

1. Bismuth salicylate, an efficient drug obtained at a reasonable price.

2. Potassium bismuth tartrate, slightly more painful than the above, very efficient in therapeutic effect, but rather expensive from the dispensary standpoint.

3. Bismogenol, about the same as number 2. These are given

in doses of 1 to 2 cc. of a 10% suspension once a week (but no oftener, as the absorption time of any bismuth compound, to be effective, takes from three to seven weeks).

Iodids

The iodids are used at the present time (because of our lack of thorough understanding of its mode of action) merely as an adjunct in the forms of treatment. We use it, principally, in the late stages of syphilitic involvement. While we have used sodium iodid intra-venously, we have found it no more effective than potassium iodid, by mouth.

Arsphenamine

From the very earliest days we found that our only way of evaluating arsphenamine would be by following some special plan of treatment and using the Wassermann test as an index. We tried to hit upon a group of arsphenamine injections, by judging how many intra-venous injections of arsphenamine it took to reduce a positive Wassermann to negative. As we found that it usually required from four to six, and occasionally eight, injections of a therapeutic dose of arsphenamine to reduce a positive Wassermann to negative, we used this number as our routine number of injections before changing to another drug. Aside from overlapping (which means giving mercury or bismuth treatment coincident with the last one or two arsphenamine treatments), and we have found that the danger of drug fastness was so great, and that considering the work of Rubin, *et al.*, in which it was shown that neo-arsphenamine and arsphenamine alone had as great a therapeutic efficieny as when used with mercury or bismuth, we tried very early to give up combined therapy.

Several investigators have shown since that lesions do not heal faster, nor does the Wassermann become negative sooner under this compound treatment, and Chargin, of New York, has shown that the more intensive method of treatment, while more reactive and more damaging, does not reduce the Wassermann to negative sooner, nor heal the lesions perceptibly quicker.

Because of these facts, our routine consists of six to ten weekly injections of arsphenamine (as that has been experimentally proved to be the most powerful, though reactive, of all the treponemacidal drugs), followed by a group of weekly injections of bismuth, or, in the event of an intolerance to bismuth, of mercury. We do not believe in rest periods, as it has been proven conclusively that ordinarily, certainly in cases of early syphilis, the danger of relapse and recurrence is a very

real danger, even in so short a rest period as four to eight weeks. Our experience, as well as the experience of other syphilologists, has shown that less than six months of treatment gives a reasonable expectation of cure or arrest in only about 10% of the patients; whereas, carrying the treatment consistently and consecutively for about one year beyond the obtaining of a negative Wassermann gives us from 90 to 95% arrests or *cures*. While the usual computation of the dose is about 0.1 of a gm. for every 25 lbs. of weight, this has been found to be very reactive, and not very workable in ambulatory patients. We have, therefore, arrived at a routine dose in the usual giving of 0.3 gm. for women, 0.4 for men, and 0.2 for children over six years of age.

Neo-Salvarsan

Neo-salvarsan is treponemacidal, but to a much lesser extent than arsphenamine.

If a patient should come in on a day other than an arsphenamine day, we administer neo, as it is much easier to prepare than arsphenamine.

As reactions are much less frequent from neo than with arsphenamine, and considerably less frequent as to vaso-motor reactions, neo has been our drug of preference in cardio-vascular syphilis. Particularly, those of poor compensation. In non-cardiac cases, with persistent nitritoid reaction following the administration of arsphenamine, resort is made to neo or silver arsphenamine, and also in patients with pernicious anemia or senile conditions.

And in those patients in which there is a local thrombophlebitic reaction due to hyper-alkalinity of arsphenamine or in those patients sensitized to any degree of alkalinity of arsphenamine, neo or silver arsphenamine is resorted to.

Silver Arsphenamine

Silver arsphenamine is a drug higher in therapeutic effects than neo, but not as high as arsphenamine. The danger from argyria has proven a stumbling-block to many, but there has been no authentic reported case of argyria following silver arsphenamine. Silver arsphenamine has been found to be of particular effectiveness in the treatment of congenital syphilis, and in adults where a Wassermann fast case is found.

Sulph-Arsphenamine

The only real recommendation for sulph-arsphenamine is that it can be given intra-muscularly, and we, therefore, use it in the treatment of syphilis of infants. Because of the sev-

eral cases reported of sub-mucous hemorrhage and dermatitis, following both the intra-venous injections of sulph-arsphenamine, and the intra-muscular injections, this drug has a very limited area of activity. It has no greater affinity for the central nervous system and we have given it up for those conditions.

Dosage: Neo can practically always be given in 0.2 gm., with little or no danger of untoward reaction. I have never met with a case of severe reaction from neo, either privately, at Dept. L, of the Johns Hopkins Hospital, or at the University Hospital syphilis clinic. The ordinary dosage is 0.3 to 0.6, in non-cardiac cases reaching 0.9.

Of silver arsphenamine, the dosage is usually from 0.1 to 0.3. In sulph-arsphenamine, the dosage is usually from 0.2 to 0.6, and in exceptional cases up to 1.0 gm.

The treatment of late or so-called latent syphilis requires more care and observation than during the early stage. The dosage is usually less and the persistence of treatment under consistent control.

Spinal Puncture

Various observers have reported involvement of the cerebro-spinal tract as occurring in from 25 to 66% in all cases of syphilis. The higher percentage is given by Gennerich and includes those cases in which only an increase in lymphocytes were taken as an indication of some involvement in this region. We, therefore, prefer that every early case have, if possible, two courses of arsphenamine and bismuth treatment before requesting a spinal fluid examination. All cases, at some time or another, have a lumbar test done for examination, as in this way we can meet up with asymptomatic neuro-syphilis and frequently prevent it becoming symptomatic.

Reactions from Arsphenamine, Including Healing of Lesions

From arsphenamine, the reaction of healing takes place, due, principally, to the destruction of the organisms causing inflammation, and to a lesser extent to the stimulation of the tissue-resisting cells. Bismuth and mercury, on the other hand, have a feeble spirochaeticidal, treponemacidal action, but a greater stimulation to the tissue-resisting cells.

The healing of the late lesions, being of a deeper involvement, ordinarily leave scars; whereas, those of early syphilis, being superficial in type, rarely leave a scar, or even a persistent pigmentation.

Untoward Reactions

Immediate

Nitritoid Crisis
Pain in Back
Cardiac Reaction
Urticaria.

Of these, the most dangerous are the nitritoid crisis and the cardiac reaction. The Nitritoid crisis, while extremely unpleasant, carrying with it dyspnoea and extreme discomfort, is only dangerous when occurring in a patient having cardiovascular disease. Being a vaso-dilator reaction, we use vasoconstrictor drugs to counteract its effect. The urticarial reaction is occasionally met up with, and never dangerous except when occurring in the laryngeal region. The lumbar pain may, at times, become extremely uncomfortable, but is never dangerous.

Slightly Delayed

Nausea, Vomiting
Chills, Fever
Malaise
Headache
Urticaria
Diarrhoea.

Of these, only the diarrhoea may become troublesome, otherwise they are merely annoying.

Delayed

Jaundice
Skin Rash
Itching
Sore Mouth
Drowsiness
Loss of Weight.

The most troublesome of these six are jaundice, dermatitis, itching and loss of weight. The itching should be noticed, particularly, being an indicator to a developing dermatitis. And dermatitis of the exfoliative type is frequently severe enough to cause death by secondary involvement. Jaundice, frequently associated or following dermatitis, may lead to acute yellow atrophy. Loss of weight is occasionally associated with leucopenia.

Herxheimer Reaction

The Herxheimer reaction, which consists of pain in or intensification of lesions, is due to the effect of toxins liberated from syphilitic lesions, and ordinarily occurs only following the first injection of mercury, bismuth, or arsphenamine. Treatment of central nervous system syphilis is, paradoxically, treatment during the so-called primary-secondary stages of the disease, for, if detected at this time, about 20% of these involvements may be arrested by intensive and consecutive antisyphilitic treatment.

With asymptomatic paresis, we have been able to show very good results by means of intra-venous injections of tryparsamide. But where these have failed, resort is made to the following modes of therapy:

Swift-Ellis Treatment

Ogilve Modification

Durcum Byrne Drainage Modification at Baltimore City Hospitals.

Malaria Infections or Other Severe Fever-producing Methods.

A SIMPLIFICATION OF INSTRUCTION FOR THE DIABETIC PATIENT

By Reed Rockwood, M.S., M.D.,

Associate in Medicine, University of Maryland

The increased knowledge of the metabolic changes occurring in diabetes which has been gained during the past ten years has been of the utmost importance to us in the treatment of the disease. Although this phase of progress has not been given as great publicity as the use of insulin, it is of equal importance, and without it insulin could not have been so quickly and accurately applied as a potent remedy in this condition.

One of the most important steps is our better understanding of what we mean by tolerance in the diabetic patient. Formerly we measured tolerance in the terms of the amount of carbohydrate actually ingested, but we have more recently learned that we must think of the tolerance of the patient in terms of the glucose derived from all sources. Woodyatt summarized the earlier work on the subject and called attention to the fact that the glucose metabolized by the patient comes from three sources. All of the carbohydrate is converted to glucose in the body, with the exception of smaller quantities of certain types

which cannot be utilized. About 58% of the protein may be converted into glucose, and this may come either from the tissues or the food, so that the nitrogen balance of the patient must often be considered. All, or nearly all, of the glycerol portion of the fat may be converted into glucose, and hence about 10% of the fat follows this metabolic pathway.

The central defect in diabetes is an inability to oxidize glucose, regardless of the original source from which it may have come. The first step in our treatment is to determine, with a fair degree of accuracy, the number of grams of glucose that the patient is able to oxidize, and then to compare this figure with the normal. This is done by estimating the number of grams of glucose from all sources which the patient is metabolizing and subtracting from this the number of grams of glucose which he excretes in the urine. A true determination of tolerance cannot be made in the presence of infection or until the patient has been rendered sugar free by diet.

Such a concept much simplifies diabetic treatment and is of considerable practical value in many ways. I have called attention elsewhere to the very prevalent error of prescribing unlimited quantities of substitute breadstuffs, such as whole wheat, rye, graham or gluten. Although the carbohydrate content varies in these different types to some extent, the glucose value is very little different, since as the carbohydrate falls the protein rises, and hence the patient does not benefit to any considerable extent by the substitution.

After the patient's tolerance has been determined, we must plan a diet which will contain a less number of grams of glucose than he can oxidize, or we must increase his power to oxidize glucose by the addition of insulin. The guiding principles which determine us at this stage have been well described by Wilder, who has also developed a set of graphic charts which are of great service in planning such diets.

The exact form of management will depend to a considerable extent upon the tolerance for glucose which has been found. A normal individual usually metabolizes from 500 to 600 grams of glucose daily from all sources. Apparently, in a normal person, the capacity to handle glucose is only limited by the capacity of the digestive tract. Thus, in some experiments which I carried out in Dr. Boothby's laboratory at the Mayo Clinic, I took on a number of days a diet containing 1000 grams of glucose, without the occurrence of glycosuria or an alteration of the fasting blood sugar. A study of the diet of Maine lumbermen at hard labor shows that their daily intake of glucose is over 1100 grams. In certain individuals with high glucose diets, the blood sugar will rise over the renal threshold and be

passed out through the kidneys, causing a few grams of sugar to appear intermittently in the urine. This is only a defect in the storage mechanism and not in the utilization of glucose.

In diminutions of glucose tolerance from this normal level down to a tolerance of about 200 grams, a qualitative restriction of carbohydrate in the diet will suffice to keep the patient in good condition and sugar free. That is, the patient is instructed to refrain from eating any sweet food and to limit the amount of breadstuffs of all kinds to not more than one slice per meal. With tolerances of between 150 and 200 grams of glucose, it is usually necessary to make a still further restriction and discontinue the use of ordinary breadstuffs. With the substitution of soy bean or casein flours an unweighed diet can be given which will not have a glucose value of over 150 grams.

When the patient's tolerance is between 150 and 100 grams of glucose, it is usually necessary with our present methods of management to prescribe a weighed diet in order to accurately control the progress of the disease, and sometimes this method of management can be extended to include patients of small surface area and sedentary occupation who have tolerances as low as 70 grams of glucose.

If the tolerance for glucose is less than 100 or 70, it is usually necessary to add insulin so as to increase it to the point where sufficient calories can be given to cover the patient's metabolic requirements. With a tolerance of 100 grams of glucose and the use of high fat as described by Wilder, sufficient calories can be fed to sufficiently nourish all except those doing heavy muscular labor. Therefore, in such cases each patient's tolerance should be determined and one unit of insulin added daily for each two grams of the difference between the tolerance and about 100 grams, the exact glucose value being dependent upon the total calories which the physician wishes to prescribe.

While theoretical conceptions are of great value in handling the patient, more difficulty is experienced in putting them into practical effect. A high percentage of patients in the average hospital are of a mental level, which makes it impractical to teach many of them to weigh their food accurately. Of course, as Joslin has well shown, with more intensive instruction, a larger number can be reached, but in the ordinary general hospital with few metabolic patients, the limitations of the staff and financial considerations prevent such thorough work. Much can be accomplished in the dispensaries, however. A method of simplification of diabetic instruction is, therefore, much to be desired. With our newer recognition of the fundamental importance of the glucose value of the diet rather than its

carbohydrate content, we are enabled to make such a simplification which will do away with scales and extensive calculation for a large number of diabetic patients who are now forced to use them.

Rabinowitch has recently called attention to the fact that our weighed diets which we are accustomed to use are often not as accurate as we would like to think them. The basis for all dietetic calculation in hospitals is the food tables of Atwater and Bryant. There are two limitations in the use of these tables. In the first place, many articles of food are represented only by a few analyses, and hence the average may not be truly the average value for a larger series. In the second place, figures are given both for the maximum and minimum values as well as the average, and there is often a wide range of variation. In such a case by using only the average value of our food material, we may not have at all the one which corresponds to our particular sample which we are feeding the patient. Of course, in the construction of a weighed diabetic diet, many of these errors balance, and the result is usually somewhere near that which we expect.

Rabinowitch, however, has shown that the error may not be inconsiderable by analyzing the calculation of 100 diabetic diets prescribed in the hospital and determining the possible maximum and minimum values for glucose. The glucose value of these diets as prescribed was 94 grams. As a matter of fact, it could have varied from 61 to 130 grams. In the majority of cases, however, he shows that it was probably somewhere between 79 and 109 grams, although it was supposed to be 94 grams.

I have emphasized the above variations in order to show that we need have no hesitancy in doing away with scales and a weighed diet provided that we can substitute for them a method of management of an equal degree of efficiency.

The diet table attached to this paper, which was prepared by myself with the aid of Miss Louise Caldwell, the Dietitian at the University Hospital, we feel, is of considerable value along this line for a large group of cases. In most patients with uncomplicated diabetes we are concerned only with the tolerance for glucose and in prescribing a diet which will contain less glucose than the tolerance. Hence, in mild or moderately severe cases, in which we do not have to especially consider the ketogenic-antiketogenic balance, it is unnecessary to specify the actual amounts of protein, fat and carbohydrate, but we need only to limit the total number of grams of glucose from all sources which may be ingested. This diet is especially adapted for patients with a tolerance of from 100 to 200 grams

of glucose—in other words, the group in which a weighed diet without insulin would frequently have to be employed. I am still uncertain whether it will prove to be accurate enough for patients with a lower degree of tolerance in whom it is necessary to use insulin, but I am working cautiously along these lines in an effort to determine the precautions which are necessary in this group of cases. By thus limiting the diet prescription to the number of grams of glucose which are allowed, the only calculation which the patient needs to do is one of simple addition, and the varying factors of protein, fat and carbohydrate do not need to be considered. By using measured portions instead of weights, the use of scales is abolished, and we feel that this is accurate enough for the milder class of patients. The larger variety of items on the list gives the patient a greater choice of foodstuffs than with the ordinary shorter diet list. In some patients who are obese, weight reduction is an important part of the treatment, and for this reason the caloric content of the various items are added so that this factor can also be controlled.

Woodyatt called attention to the fact that there is a group of patients, commonly diagnosed as diabetic, who have a high fasting blood sugar and a more or less constant glycosuria of only a few grams. Sugar tolerance tests give a typical so-called diabetic curve. Regardless of the intake, nearly all the glucose is metabolized, and little or no increase appears in the urine and the blood sugar may show relatively little change. I have seen a number of such cases, usually in the type of diabetes associated with arteriosclerosis. Woodyatt is undoubtedly right in his statement that such cases do exist, which must be distinguished from the mild diabetic with a high glucose tolerance which can be exceeded by increasing the diet. Undoubtedly, also, such cases are often overtreated, since to render them aglycosuric and to bring the blood sugar within normal limits often requires extreme dietary restriction. What the ultimate course of these patients is has yet to be discovered. As yet we do not know whether the high blood sugar in this sort of patient predisposes, to infection, gangrene, coma or any of the other complications of diabetes. At present we can only say that the difficulty is more one of a defect in carbohydrate storage rather than in carbohydrate utilization. For the present, as a matter of safety, it seems preferable when patients are diagnosed as the Woodyatt form of diabetes to place them on a qualitative restriction of carbohydrate, or to give them a diet of 200 grams of glucose from the appended diet list, and then to allow the patient to ignore the glycosuria and hyperglycemia and only report to the physician in case complications should occur. An illustrative case follows which

also shows how the diet list may be used in the diagnosis of this type of the disease:

Mr. J. M., age 66, entered the hospital because of bronchopneumonia and cardiac decompensation. Sugar was found in the urine on routine examination. There had been no diabetic symptoms. After the recovery from his acute condition, his tolerance was determined, with the following results:

Date	Glucose Grams in Diet	Glucose Grams in Urine	Glucose in Blood Mgs.
4/19	100	---	---
4/20	100	---	---
4/21	200	---	160
4/22	200	2.4	---
4/23	300	0.9	150
4/24	300	1.5	---
4/25	400	trace	128
4/26	400	1.0	---
4/27	---	---	167

The results of a sugar tolerance test by ordinary methods are shown in Figure I:

FIGURE I.

SUGAR TOLERANCE TEST

(110 grams glucose)

	April 27th, 1926		January 14th, 1927	
Hour	Glucose in Blood Mg.	Glucose in Urine Gm.	Glucose in Blood Mg.	Glucose in Urine Gm.
Fasting	167	trace	108	---
½ Hour	224	---	212	---
1 Hour	300	0.6	238	---
2 Hours	370	4.0	194	0.2
3 Hours	304	2.0	100	0.1
4 Hours	208	0.7	74	trace

The patient was discharged, with instructions to make a qualitative restriction in his carbohydrate intake (about 200 grams of glucose), which he followed, more or less, faithfully.

He was readmitted nine months later because of increasing severity of anginal pain, although he had no acute cardiac failure. His fasting blood sugar was 127 mg. per 100 cc. by the new Benedict method. He was kept on a diet containing about 400 grams of glucose for more than two weeks without showing any more than a trace of sugar in his urine. A repetition of his sugar tolerance test gave the figures shown below (Figure I), showing that the diabetic character of the curve had completely disappeared.

Here, then, we have a patient who ordinarily would be treated as a diabetic because of his glycosuria, high fasting blood sugar and diabetic sugar tolerance curve. However, more careful study showed that he had no defect in carbohydrate utilization and his disturbance in carbohydrate storage seemed to disappear after a lapse of nine months.

Summary

A new diet sheet is presented which gives the total glucose value of the diet from all sources, thus simplifying the instruction of the diabetic patient and making it possible to handle an increasing number of patients with less effort and without weighing the food.

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DIET LIST FOR PATIENTS WITH DIABETES OF MODERATE SEVERITY

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND

1. The following list omits entirely the obviously sweet and starchy foods and enables the patient to plan his diet so that its sugar value will not exceed his tolerance.
2. Any combination of the foods listed below may be selected not to exceed for any one day the figures for sugar value and calories given below.
3. Foods not listed below must not be taken.
4. All measurements in tablespoons and teaspoons are heaping.
5. Saccharine tablets may be substituted for sugar in sweetening food and drink. Do not take more than four grains daily.
6. If troubled with constipation, eat at least two large servings of fruits and vegetables at each meal. Bran, agar-agar, mineral oil or *Diabetic* Petrolagar may be used in addition These have no food value and need not be counted.

YOU ARE ALLOWED TO EAT_____GRAMS OF SUGAR FROM ALL SOURCES EACH DAY.

YOU SHOULD EAT (NOT MORE THAN) (AT LEAST)_____ CALORIES EACH DAY.

CEREALS AND BREAD STUFFS

FOOD	AMOUNT	SUGAR VALUE	CALORIES
Bread	1 av. slice	16	75
(Figure all types of bread, rolls, toasts, etc., as above.)			
Crackers, graham	1	6	30
Crackers, soda	1	4	20
Post toasties	1 c.	20	70
Puffed rice	1 c.	13	50
Shredded wheat	1 biscuit	23	110
Popcorn (popped)	1 c.	10	50
Rice (cooked)	6 tb.	22	90
Macaroni (cooked)	¾ c.	21	90
Flour (wheat)	¾ c.	75	355
Cornmeal	⅔ c.	76	345
Cream of Wheat (uncooked)	3 tb.	24	105
Tapioca (minute-uncooked)	3 tb.	26	105
Cornstarch	¼ c.	30	130
Soy bean flour	¾ c.	28	320
Lister flour	1 box	23	160
Cellu flour		0	0
Bran, *washed*		0	0

DAIRY PRODUCTS

Milk, whole	½ c.	7	70
Milk, skim	½ c.	7	40
Cream, 20%	½ c.	6	190
(Use upper 3 inches of 1 quart of milk after standing for 24 hours.)			
Cream, whipped	1 c.	11	530
Butter	1 square	0	75
Cheese	2¾″ x 2½″ x ⅛″	18	450
Egg, whole	1	4	80
Egg, yolk	1	2	60
Egg, white	1	2	15

MEATS AND FISH

Meat, lean, raw	¾″ x 3″ x 2½″	12	200
Meat, lean, cooked	¾″ x 3″ x 3¼″	14	235
Beef roast, fat cooked	¾″ x 3″ x 3¼″	15	370
Bacon, raw	1 slice	2	80
Bacon, crisp	1 slice	1	15
Fish, except salmon	Same as meat	10	120
Salmon	Same as meat	12	210
Oysters and clams	⅓ c.	4	50
Lard, tallow, oleomargarine, cod liver oil, olive oil, Crisco and other oils.	½ c.	10	800–950

NUTS

Peanuts	¾ c.	40	540
English walnuts	24 average	15-	70
Almonds	25 average	9	160

FRESH FRUITS

(Canned fruits cannot be used unless preserved without sugar)

FOOD	AMOUNT	SUGAR VALUE	CALORIES
Apples	1 average	15	65
Apricots	1½	13	55
Bananas, sliced	¾ c.	23	100
Blueberries	⅔ c.	12	55
Blackberries	½ c. (25 large)	12	60
Cantaloupe	½ medium	19	60
Cherries	¾ c.	10	50
Cranberries	¾ c.	10	50
Currents, fresh	¾ c.	10	20
Dates	14	90	350
Gooseberries	¾ c.	10	20
Grapes	20	20	100
Grapefruit	½ medium	11	45
Figs	5 average	76	315
Huckleberries	⅔ c.	12	55
Lemons	1 large	10	45
Orange	1 small	10	50
Pears	1 average	15	65
Peaches, fresh	1 average	10	45
Peaches, dried	1 average	10	85
Plums	2 average	20	85
Prunes	2 average	20	45
Pineapple	1 slice	10	45
Raspberries	⅔ c.	14	65
Raisins	¾ c.	77	345
Rhubarb	3 small stalks	4	25
Strawberries	⅔ c. or 12 medium	8	40
Watermelon	3″ x 2″ x 1¾″	10	45

VEGETABLES, STEWED

Asparagus	½ c. or 12 tips	3	20
Beans, lima, uncooked	½ c.	24	110
Beans, string	⅔ c.	9	40
Beans, navy, uncooked	½ c.	17	80
Beets	⅔ c.	10	45
Cabbage	⅔ c.	6	30
Carrots	⅔ c.	10	45
Cauliflower	⅔ c.	6	30
Corn, green	1 average	21	100
Corn, canned	½ c.	21	100
Greens, beet or dandelion, cooked	½ c.	4	25
Egg plant	½ c.	3	30
Mushrooms	⅔ c.	9	40
Onions	½ c.	11	50
Peas, canned	½ c.	12	55
Peas, fresh	½ c.	21	100
Parsnips	¾ c.	15	65
Potato, boiled or baked	1 average	20	85
Potato, mashed	10 tb.	20	85
Potato, creamed	½ c.	31	170
Potato, fried	1 average	20	220
Sauerkraut	⅔ c.	6	30
Spinach	½ c.	4	25
Squash, summer	½ c.	6	30
Squash, Hubbard	¾ c.	6	30
Swiss chard, cooked	½ c.	4	25
Tomato	½ c.	4	25
Turnips	½ c.	9	40

VEGETABLES, FRESH

FOOD	AMOUNT	SUGAR VALUE	CALORIES
Celery	3 stalks	3	20
Cabbage	1⅓ c.	3	15
Cucumber	1 average	3	15
Lettuce	1 large head	3	15
Radishes	9 average	3	15
Tomatoes	1 average	4	25
MISCELLANEOUS			
Soups, clear and bouillons, without fat or milk		0	0
For other soups add amount of vegetables, flour and milk which are used in making.			
Tea, coffee, cocoa and chocolate, without milk		0	0
Jello	¾ c.	58	400

THE FREQUENCY OF UNRECOGNIZED OTITIS MEDIA IN CHILDREN

By C. Loring Joslin, Baltimore, Md.

Acute otitis is a condition concerning which we must greatly change our present conception. It is described, in most of our textbooks, as "A frequent affection during infancy and early childhood, attacks usually occurring in the cold season." Acute otitis, as a rule, is a secondary disease, being preceded in some form by some infectious process, such as "rhinopharyngitis." In the past all writers have laid great stress upon the fact that otitis is a frequent complication of measles, scarlet fever, diphtheria, and other infectious diseases. Even in Holt [1] only a few years back we find quoted a table from Downing, of Glasgow, which shows statistically that 42.3% of otitis media occur secondary to measles, scarlet fever, whooping cough, and mumps; 20% occurs during dentition (as if the poor teeth were responsible); 29.4% secondary to simple catarrh of the naso-pharynx; 1.6% due to syphilis; 6.7% of doubtful origin. In the last edition of this work these statistics are omitted, but none more in accord with modern experience are given. Other textbooks and systems of medicine also include dentition as a cause of otitis.

Otitis media, evidently, is a more frequent disease than it formerly was, or its occurrence has been frequently missed in the past. Both conditions, I think, are true. The ease of diagnosis with the modern electric otoscope as compared with the difficulty in earlier days, when only the head mirror and reflected light were available, is, perhaps, the more important factor.

[1] Holt: Acute Otitis, Diseases of Infancy and Childhood, 1910.

The conception of the general practitioner concerning otitis is the same that I was taught, and held until the past few years, namely: that it is frequently the cause of obscure fever, and that every case of scarlet fever and measles is likely to develop the complication. It is seldom thought of as the cause of an infant being ordinarily cross or fretful; instead, too often the mother is informed that the child has colic or is teething. The grandmother has already convinced herself that this is the cause, her children having had similar trouble. The hurried doctor cannot find any other cause, and a diagnosis of teething or colic easily solves the problem. It is rarely considered necessary to look at the ear unless the child directs attention to it, and this only the older ones will do, and even they, frequently, do not complain of severe pain when the drum is at the point of rupturing.

I wish to stress the fact that in infancy otitis media is one of the commonest infections, and must be thought of not only as a complication of other infectious diseases, but as a most usual accompaniment of mild naso-pharyngitis, accountable for almost any type of nervous, febrile or nutritional disturbance. One devoting his time to children since the use of the electric otoscope can hardly help being convinced that in years past, when the child was thought to be teething because it was cross, fretful, or would not sleep, in reality it was not the teeth, but the ears that were responsible for the infant's restlessness.

To justify this impression, and bring home more clearly the fact that otitis is being frequently overlooked, a few cases will be recorded:

Age, 2 years. Family history, negative. Past history, negative. Present illness, sick two weeks with high fever, cross and fretful all the time, cries a great deal. Temperature, 104. Pulse, 160. Respiration, 60. One trained nurse and two doctors attending daily for ten days. Patient was being treated for pneumonia, but failed to have a crisis. Physical examination showed the child had a few scattered rales in the chest, a slight bronchitis, but no pneumonia. The left ear was normal, the right showed a small amount of pus beneath the drum. Paracentesis was performed; the child looked up and smiled. The mother remarked: "That is the first time he has smiled for two weeks." The temperature, after having remained between 104 and 105, with a corresponding rapid pulse and respiration, dropped to normal—the supposed pneumonia was cured.

Case B: Dr. D——— called me on the phone and stated he had a case of pneumonia in a boy two years of age, in which the pulse remained around 200, in spite of the fact that he was

giving tincture of digitalis. The following day I saw the child. Physical examination revealed a pulse rate, the nearest I could count, around 200; temperature, 103; respiration, 40. There were a few rales in the chest, but no consolidation. A mild bronchitis. Both ears showed a slightly bulging drum, with a purulent discharge beneath. Double paracentesis was performed, and in two hours the pulse had dropped 20 per minute; in four hours, 40 per minute; in eight hours, 80 per minute, and the following day temperature, pulse, and respiration were normal—the child wanted to play. The bronchitis rapidly cleared up, because the toxic absorption from the otitis was relieved.

Case C: Baby A———, seen on August 3, 1925, age 4 months. Complaint of mother was that the child had been crying most of the time for the past three weeks, unable to sleep at night. The doctor had been seeing the baby every day or two, and giving various things, in the way of fruit juices and medicine, for the colic. Examination was negative, except for the ears; both drums were bulging and very red. Double paracentesis was performed. The infant, mother, and father slept peacefully that night.

Case D: I was called in to correct the feeding of an infant. The mother said the baby was not gaining, also was teething. Because he was so cross and fretful she knew that it was the teeth; the other five children had all had the same trouble. After considerable persuasion, I was permitted to examine the ears, and, as suspected, the left drum was inflamed, but not bulging. The right had to be opened. With a few drops of phenol and glycerine in the left, and paracentesis of the right, the infant was quite comfortable. After the same procedure two months later the mother said: "Doctor, I know now what was wrong with my other children when we thought they were teething—it was their ears, because they have all acted in the same way."

These are not rare experiences, many more could be quoted, but they give an accurate idea of the situation. Otitis media is one of the most common infections seen in children during the first and second years. It occasionally occurs during the summer months, following a rhino-pharyngitis, but is most common during the fall, winter, and early spring. In none of the cases just cited did the child direct any attention to the ear by picking or pulling at it. This is rather an important point that I wish to lay great stress upon. Many doctors, and most mothers, seem to think that unless the child pulls at its ear it has not otitis media. The majority of the cases occur in infants who are too young to call attention to the location

of the infection. The symptoms of otitis media, as I have found them, enumerated according to the frequency, are as follows:

1. Cross and fretful.
2. Crying.
3. Fever; this may be present or absent, it may be of low grade, with only a slight rise some time during the day, or it may be relatively high.
4. Local tenderness.
5. Pulling the ears.
6. Rapid respiration and pulse.
7. Loss of appetite.

These, and all clinical evidences, vary so that an absolute diagnosis of otitis media can only be made upon an otoscopic examination. This should be routine in all children who are cross, fretful, have fever, or any evidence of a rhinitis.

In reading some of the literature on otitis media, I find many articles on the treatment of mastoiditis, but little about the frequency of otitis or the prevention of mastoiditis. F. Holt Diggle [2] says: "There is, in my opinion, no branch of surgery more neglected than the treatment of acute otitis media. Almost every day one meets with cases where an acute inflammatory condition of the middle ear has been allowed to progress until a state of chronic suppuration, with all its attendant sequelae, has resulted." Robert Southby [3] says: "During the course of a number of autopsies performed on infants and children, the author has been impressed with the frequent incidence of otitis media which had apparently given rise to neither symptoms nor signs ante mortem. In a total of 50 consecutive autopsies in which the middle ear cavities were examined, 32 of the children were under 2 years of age, and the rest older. Gross purulent infection of one or both ears was found in 33 instances, in no less than 26 of which both ears were involved. David F. Smith [4] reports observations on 205 cases of otitis media occurring in 613 consecutive hospital admissions to the Harriet Lane Home from February 6th to August 6th, 1923. His conclusions are as follows:

1. In 613 admissions, 33.4% of the children either had otitis media when they came in, or developed it while in the hospital.

[2] Diggle, F. Holt: A Plea for the Earlier Operative Treatment of Acute Otitis Media, British Medical Journal, November, 1924.

[3] Southby, Robert: Symptomless Otitis Media of Infancy and Childhood, Some Post Mortem Observations, Medical Journal, Sydney, Australia, April 26th, 1924.

[4] Smith, David F.: American Journal of Diseases of Children, July, 1924.

2. The race and sex of the patient seemed to have no relation to the incidence of the disease.
3. There was a definite seasonal variation. In February 46.3% of the patients had otitis media; in July only 23.6% of the children were attacked.
4. The most susceptible period was between the ages of 3 and 15 months. In this group more than 50% of the children had otitis media.
5. Patients with pneumonia, dysentery, nasal diphtheria, pertussis, and pyelitis developed otitis media in 50% or more of the cases. Those with the condition of prematurity, nephritis, and the non-infectious diseases showed ear infections in less than 21%.
6. Hemolytic streptococci were isolated from the aural discharge in 56% of the 50 cases cultured.
7. The average duration of the disease in 100 cases was twenty-five and one-half days.

It has been shown that otitis occurred in over 50% of infectious diseases occurring in the Harriet Lane Home, and I am sure that the ear in the majority of cases of acute rhinopharyngitis, or colds in the head, occurring in infants will show some time during the attack congestion of the tympanic membrane. The majority of these, fortunately, clear up with little symptoms other than the child is cross, fretful, sleepless, and may have a slight fever for a few days. Some of these, if not treated, will go on to suppuration, the drum, later, rupturing, if paracentesis is not performed. Occasionally one of the complications, as mastoiditis, meningitis, or septicemia, will develop. I will not attempt at this time to describe the appearance of the drum necessitating paracentesis, other than to say that every practitioner should be familiar with the normal drum, and should be able to recognize the drum that is bulging, or one that shows pus beneath the drum, which is not, necessarily, markedly bulging. If this condition is recognized sufficiently early, and proper treatment instituted, mastoiditis and the other complications of otitis media will be eliminated. The old practice of waiting for the ear to rupture is a bad one. Otitis media should never be allowed to progress to the stage where the drum ruptures, for the reason that the child may be left with defective hearing, chronic otitis media, or there may develop other complications, as mastoiditis, meningitis, and septicemia. In conclusion I would like to stress the following:

1. That otitis media is a much more frequent disease than we have formerly thought.

2. That it is a common complication of acute rhino-pharyngitis, and most infectious conditions occurring during the winter months.
3. That it is one of the most common causes of an infant being ordinarily cross and fretful.
4. That it should be considered bad practice of medicine to permit otitis to proceed to spontaneous rupture.
5. That the earlier otitis media is recognized and properly treated, the less likely are complications to follow.
6. That mastoiditis and the other complications of otitis media are, in the majority of cases, preventable.

This will be shown in a subsequent paper to be published.

1017 St. Paul St.

EDWARD WARREN, A.M., M.D., C.M., LL.D.

By Randolph Winslow, M.A., M.D., LL.D.,
Baltimore, Md.

(Read before the Book and Journal Club of the Medical and Chirurgical Faculty, March 16, 1926.)

There are probably but few members of the medical profession now living who have any personal recollection of Dr. Edward Warren, who was a conspicuous and picturesque personage in this city somewhat more than half a century ago. He was born in Tyrrell County, N. C., in 1828, but when he was four years of age his father moved to Edenton, and Edward was reared in this pretty and aristocratic town in the eastern part of the State. He was the son of Dr. William Christian Warren, a native of Virginia, and his mother was a Miss Alexander, also of Virginia; both of whom were of distinguished ancestry. When 15 years of age he was sent to a boarding school in Fairfax County, Va., and on the first night of his residence there he was mildly hazed, which resulted the next morning in a fist fight with one of those who had caused him annoyance. His opponent was George A. Otis, who subsequently published that monumental work, "The Medical and Surgical History of the War of the Rebellion," in which a hip-joint amputation is recorded as having been performed on July 21, 1861, by Brigadier-General Edward Warren, Surgeon-General of North Carolina, with the usual fatal result. While at the above-mentioned school, on one occasion, he was persuaded to spend the night with a seminarian in a neighboring theological institution. The theologian was very pious and much given to long exhortations to his friend and to long-

winded prayers. On this night he proposed prayers, before retiring, to which Edward assented, but as the petitions were long and the boy very tired, he fell asleep while on his knees, and when he awoke the embryo pastor was snoring in bed. The incident was promptly reported to the principal of the school as an evidence of conversion of the boy, and he was granted many privileges in consequence of his supposedly earnest seeking after the truth. After leaving school, he entered the University of Virginia, where he remained two sessions, and after a year spent at home, he re-entered the University as a medical student, and graduated with honor in one session in 1850. The University of Virginia at that time was a purely theoretical school and had no clinical facilities; so, in the fall of that year he journeyed to Philadelphia and entered the Jefferson Medical College, from which he received his second M.D. in 1851. While a student he claims to have conceived and later to have put into practice hypodermic medication several years before any other person. Returning home, he entered practice under his father, but in November, 1854, he sailed for Europe, and spent six months in attending the clinics of Paris. Here he became acquainted with Trousseau, Velpeau, Nelaton, Ricord, Maisonneuve, Andral, Charcot and others, from whom he not only received instruction, but 20 years later some of them were of great service to him, when he wished to become licensed to practice in that city. Ricord, the great syphilographer, was born in Baltimore, Md., on December 10, 1800, and, according to Warren, was greatly attached to his native country, and was "indeed a great and glorious old man, an honor alike to the country of his nativity and of his adoption, a shining light in the profession of his choice, and an ornament to society, from which he received an exhaustless tribute of reverence and admiration." Charcot was at this time an interne in one of the hospitals, and Warren engaged him to give him private instruction in physical diagnosis, and a warm friendship sprang up between them. Twenty years later Warren was surprised to find that the great physician Charcot was his former friend and instructor. In May, 1855, Warren returned to Edenton and settled down to work in partnership with his father, whose practice was very extensive. In 1856 he competed for and won the "Fisk Fund Prize," offered by the Medical Society of Rhode Island, the subject of his thesis being "The effect of Pregnancy on the development and march of tuberculosis."

On November 16, 1857, he was married to Elizabeth Cotton Johnstone, of Edenton, daughter of Rev. Samuel Iredell Johnstone, rector of St. Paul's Church in that town. She is described by her husband as the "perfection of loveliness."

The sudden death of Dr. Charles Frick from laryngeal diphtheria on March 25, 1860, vacated the chair of materia medica and therapeutics in the University of Maryland, for which Edward Warren became an applicant. In order to increase his prospects of election, he sought letters of recommendation from prominent physicians, one of whom was my father, Dr. Caleb Winslow, who was at that time living and practising his profession in the neighboring town of Hertford, 12 miles distant. Dr. Warren was elected Professor of Materia Medica and Therapeutics in the University on April 7, 1860, and I here hold in my hand a letter of thanks to my father for his assistance in the matter. He did not move to Baltimore until shortly before the opening of the session in October. He was at that time about 32 years of age, and had a wife and child. They were received with great cordiality and were "overwhelmed with courtesies of every kind. Baltimore seemed indeed a veritable Paradise" to them. He had prepared a full set of lectures, which he proceeded to read, but as he seemed to make but little impression on his classes, he asked a friend to come to some of his lectures in order to determine what the difficulty was. The friend reported that "you fire above the heads of your auditors and they do not see what you are aiming at." He, therefore, tore up his manuscript before the class, amid much applause. "From that day I never carried a note into the lecture room, but trusting to a thorough knowledge of the subject, to my natural fluency of speech and to the partiality of the class, I lectured to crowded benches." I have quoted his own statement, but from my own knowledge of the volatility of medical students in general, and of those of the University of Maryland in particular, I doubt whether the uproarious applause was anything more than the usual ebullition of students under tension.

He appeared to have been of a combative disposition, even at this early date, and we find that on November 22, 1860, he was in a controversy in regard to the publication of a medical journal, which he desired to establish and which the Faculty did not endorse. He stated the Maryland Journal, with which the Faculty was associated, "is decidedly unpopular in North Carolina, and with the Faculty of the University of Virginia, the very sources above all others from which I expect to draw students to this school, I feel that I should be doing injustice to my best friends, to you and to myself, if I had any connection, direct or otherwise, with it."

He seemed to think the Faculty had promised him to collaborate with him in his journal and that it had gone back on its word. In reply, Dr. George W. Miltenberger, Dean, says in

a letter dated November 22, 1860: "The Faculty has further instructed me to say that nothing was farther from their intention to mislead you with regard to the journal, and that while deeply regretting the misunderstanding, they did not understand that they had promised such co-operation as you seem to have expected. . . . Hoping that this may prove satisfactory to you, the Faculty would express its anxious desire that nothing may in future occur to disturb the kindly feelings which we all now entertain, or to mar that harmony which is so necessary to our mutual success and which we all desire to maintain."

He did establish the *Baltimore Journal of Medicine* in January, 1861, but only three numbers were issued.

Warren finished one course of lectures at the University, but the ominous rumors of the approaching Civil War reached a culmination on April 19, 1861, when the Sixth Massachusetts Regiment marched through Baltimore and were attacked by a mob on Pratt Street, where the first blood of that memorable struggle was shed. Sending his family back to Edenton, he returned to Baltimore, but in a few days accepted a mission to the Governors of Virginia and North Carolina, requesting a contribution of 1,000 muskets from each to arm the volunteer organizations of Maryland. He succeeded in reaching his destination in safety after some exciting episodes, but by that time it was impossible to send arms to Maryland. Nor did he return and resume his duties as a professor in the Medical School; hence, the Dean was instructed to communicate with him and learn, if possible, his intentions as to his return and the resumption of his duties, and the following letter was sent to him:

Baltimore, May 10, 1861.

My Dear Doctor:

At a meeting of the Faculty held yesterday, I was directed to request from you your views and intentions with regard to the Infirmary. Regarding it, as we all do, as one of the most important elements of our success, and the attendance upon the house as necessary a part of our duties as the lectures themselves, it is absolutely requisite that we should have some fixed arrangement of its duties. The Faculty request that you would inform them, if possible, of the time of your expected return and when you can again take charge of it. There appears to have been an idea entertained by some that on account of the existing condition of affairs the school would not be opened and lectures would be suspended the coming session. We hope that no such impression has been made upon your mind, as we shall unquestionably open our halls and commence

the course the specified time under all circumstances. Please let me hear from you at your earliest convenience, as we deem it a matter of paramount importance, if your engagements detain you for any time, to provide for clinical attendance and instruction.

Yours very sincerely,
G. W. MILTENBERGER, Dean.

The reply to this request addressed to the Dean was read at a Faculty meeting held on May 24, 1861, as follows:

Richmond, May 15, 1861.

DEAR SIR:

In reply to your communication I have to say that I have been detained from my post longer than I had anticipated, and I design returning to Baltimore in a day or two. I hardly supposed, taking the past history of the Infirmary into account, that the temporary absence of a professor for a few days would have been esteemed of sufficient moment as to induce the Faculty to hold a special meeting on the subject, or to call forth a letter reminding me of my duties in this regard. I would beg leave, also, to remark that in times like these there are some obligations, such as those to country, family and friends, of such importance as to demand the exclusive attention of every right-minded man whatever the circumstances surrounding him and in the observance of which he surely has a right to expect the support of those who should be his friends and who are certainly no more than his equals.

Very respectfully, etc.,
EDWARD WARREN.

Nothing further having been heard from Dr. Warren, on July 15, 1861, "the Dean was instructed to write again, stating that if no answer was received by July 25, the chair of materia medica and therapeutics would be declared vacant."

Baltimore, July 15, 1861.

MY DEAR DOCTOR:

At a Faculty meeting held today, I was again instructed to communicate with you concerning the condition of the school in the present state of affairs. Your prolonged absence from the city, and without any information as to your whereabouts or intentions, has already been a source of serious inconvenience to us, and becomes every day more and more so from the pressing necessity to advertise our coming course and our utter inability, from the uncertainty in which you have left us, to do so satisfactorily to ourselves or our class. From various sources we have been led to suppose that you had accepted a commission in the Confederate Army. If so, we pre-

sume, of course, you would not trust yourself in a city now in the hands of the Northern Army, and where you would be in constant hazard of arrest. Dr. Smith has written you once or twice, and has also written to your father, as your friend, his candid opinion of the prospect of the school, to neither of which letters has he received a reply. Concluding, therefore, that you did not intend to return, but unwilling to act unless fully advised, the Faculty has directed me to say that if we do not hear from you by the 25th inst., duty to the institution will oblige us to declare your chair vacant and proceed to fill it. We would prefer to learn from you fully and have been very anxious to do nothing without your entire concurrence, but strict duty leaves us but the one course to pursue.

Yours very sincerely,

GEO. W. MILTENBERGER, Dean.

To this communication the following reply was sent by Dr. Warren:

Richmond, August 6, 1861.

To the Faculty of the University of Maryland.

SIRS: I received on yesterday a letter from the Dean, written some time since, informing me that my chair was to be declared vacant on the 25th ultimo, and a substitute elected in my stead. As the date alluded to has already gone by, I suppose this threat has been carried into execution, and I write today for the purpose of giving expression to my views of this action on your part. When I first left Baltimore it was with the intention of returning in a few days, as I informed one of the Faculty, and it was not until events had occurred which rendered it unsafe and unpleasant for me to do so that I abandoned the idea. Having rendered myself obnoxious to certain parties in Baltimore by my devotion to the Southern cause, and feeling that I could not breathe the same atmosphere with those who had slain my best friend and who were ready to wage an unjust war on the land of my birth, I concluded to remain in Carolina and await the progress of events. Since that time it has been impossible for me to make my way through the enemy's lines to your city, and, hence, my detention here has been a matter of necessity. In a word, such obstacles have opposed themselves to the performance of my duties as to have rendered a proper discharge of them, even if I had been disposed to regard them, a matter of utter impossibility; and it strikes me there is no justice in attempting to punish a man for failing to do that which was utterly precluded by the circumstances of the case.

The Faculty, however, did not declare the chair vacant at the time stated, but "Professor Chew consented to perform the

duties of the chair of materia medica and therapeutics during the next session, he, of course, receiving the fee for the same." On July 26, 1862, Dr. Richard McSherry was appointed to a lectureship on the same subjects, and it was not until 1863 that the chair of materia medica and therapeutics was permanently filled by the appointment of Dr. Samuel C. Chew, Dr. McSherry having been advanced to the chair of principles and practice of medicine on the death of the elder Chew. Warren had threatened to return and resume his regular course of lectures, "and with a victorious army," but when he did return the victorious army was lacking and his chair was filled. For the four years of the Civil War he was actively engaged with the Confederate Army and was appointed by General Lee Medical Inspector of the Army of Northern Virginia, and by Governor Vance, Surgeon-General of North Carolina, with the rank of Brigadier General.

It is a noteworthy fact that a colleague of Warren's in the Faculty of the University of Maryland also reached high rank during the Civil War, but on the Union side. Dr. William A. Hammond, who was born in Annapolis, had served as a surgeon in the United States Regular Army prior to his election to the chair of anatomy in the University, but at the beginning of hostilities he resigned his chair and re-entered the Army, and was soon made Surgeon-General. To his initiative is due the establishment of those wonderful institutions—the Army Medical Library and the Army Medical Museum in Washington.

Warren was present during the Seven Days' Battles in 1862 and at other engagements, but his work appears to have been more administrative than practical. He also prepared and issued a manual entitled "Surgery for Field and Hospital," which, though imperfect in typographical execution, met with a cordial reception. Shortly after the close of the War, Warren returned to Baltimore, ruined in fortune and with but few friends, and for some time he and his family were in great destitution. Finding it impossible to regain his chair at the University, he resuscitated the charter of a defunct medical school, the Washington University, in 1867, and proceeded to organize a faculty. By a system of scholarships for wounded Southern soldiers, large classes were attracted to the school, and for some years it flourished, but soon dissentions arose in the faculty, and Warren withdrew and founded the College of Physicians and Surgeons of Baltimore, which a few years later absorbed the Washington University and continued in active operation until 1915, a period of 43 years, when it was merged with the University of Maryland. Warren occupied

the chair of surgery in both schools, and, in fact, was a professor in all three schools. I was personally present at the first commencement of the College of Physicians and Surgeons, held at the Masonic Temple in 1873, and heard Dr. Warren make the address to the 18 graduates, the subject of the discourse has, however, escaped by memory. This was his last appearance as a professor in Baltimore, and we were surprised to hear shortly afterward that he had accepted an appointment in the Egyptian Army. While attending a commencement of the Washington University, I noticed a very distinguished-looking colored man, who was the janitor of the institution. In 1880, when I became demonstrator of anatomy in the University of Maryland, I found the same man the custodian of the anatomical rooms, having been bequeathed to me by my predecessor, Dr. J. Edwin Michael. His name was William Warren, and I find his characteristics so admirably depicted by Dr. Warren that I cannot forbear quoting his eulogium here.

"My father owned a negro man named William, who had been raised in his office and to whom I am indebted for much assistance in the outset of my career. Possessing great natural intelligence, and having taught himself to read and write, he managed to acquire a considerable knowledge of medicine, while as a cupper, leecher and tooth extractor he was unusually skilful. At the same time he was the most pompous of darkeys, and with his bald head, his erect carriage, his long black coat, his faultless collar and his redundance of technical terms, he was the very type of the old-fashioned 'country doctor.' He prided himself on being a 'gentleman of quality,' and in suavity of manner, scrupulous politeness and freedom from guile, he was the equal of any man who claimed that title. And yet to his superiors he was always the most humble, respectful and obedient of servants, never forgetting his place nor neglecting any duty which his lot in life imposed. His ambition did not confine itself to the 'shop,' but aspired to the 'pulpit' as well. He preached or prayed in the meeting-house every Sunday, and he occupied all the leisure at his command during the week in preparing the 'exhortation' or 'petition to the throne,' as he designated his ministerial efforts. This preparation consisted in culling from Webster's Dictionary and the medical works in my father's library the longest and most strictly technical words that he could find, which, when the momentous occasion arrived, he distributed through his discourse without regard to the pertinency or the comprehension of his auditors. Despite this indulgence in 'high dicto,' the negro's term for language, which is beyond ordinary comprehension, his discourses abounded in much hard sense

and true religious fervor, while they were delivered with an unction which would have done credit to any bishop in the land. At any rate, whether his high-flown terms were understood or not, his efforts were accepted by 'the congregation' as masterpieces of eloquence. Notwithstanding his pomposity and the superabundant supply of vanity with which nature had endowed him, no kinder or truer heart than his ever beat in a human bosom. He loved those to whom he belonged with a steadfastness which stood the test of every trial and temptation. When 'escape from bondage' was the watchword of his race and freedom was easily in his reach, he remained quietly at his post, as humble and as faithful as if no 'proclamation' existed. And ever since, whenever the occasion has offered, he has never failed to manifest the most profound respect and the tenderest affection for his 'old master and mistress,' as he still delights to call them. In view of these facts, and of many others of a kindred nature, it is impossible for me to take into consideration the color of his skin or the quality of his blood, and I can only feel toward him as a friend and brother."

In 1871 Warren was elected Vice-President of the Medical and Chirurgical Faculty of Maryland, and in 1872 chairman of the section on surgery and anatomy of the American Medical Association. In the winter of 1871-1872 the trial of Mrs. Wharton for the murder of General Ketchum took place at Annapolis, and Dr. Warren was the chief medical expert for the defense, and upon his testimony, that the death of the General was due to cerebro-spinal meningitis and not to antimonial poisoning, she was acquitted. During this trial he made his famous retort to the opposing lawyer, who said: "You doctors bury your mistakes six feet under ground," and replied Warren: "You lawyers hang yours six feet in the air." His testimony in this case undoubtedly caused the verdict of "Not guilty" to be rendered in favor of the defendant, but while it brought him great credit away from home, the reaction was not favorable in Baltimore, and he lost caste in this community. On this account, and through grief over the death of his son, he determined to leave Baltimore and to begin life anew in some other locality. Hence, he sought to enter the service of the Khedive of Egypt, and was offered the position of chief surgeon of the general staff of the army, with the rank of colonel. He sailed from New York on April 2, 1873, and in due course reached Alexandria. One of his first patients was Kassim Pasha, the Minister of War, who was suffering from a strangulated hernia. Warren proposed that chloroform should be administered, and an attempt made to reduce the hernia, and in the event of failure that herniotomy should be

performed. In spite of the opposition of the other physicians, the anesthetic was given, and by great good fortune the protrusion was replaced, though it had been out for three days. This established his reputation, and he says he "found himself the most famous man in Egypt."

At the request of the Minister of War, the Khedive made him a Bey and decorated him with the Order of the Medidjieh. The harem presented him with a beautiful gold watch and chain, and he was thanked and congratulated by the highest dignitaries of the country; and he secured an immense practice, "including every incurable case in Cairo." One in every twenty persons in Egypt were said to be either partially blind or quite blind from ophthalmia, and Warren suffered severely from that affliction, which, however, was the means by which he escaped being sent to the Soudan, with the prospect of almost certain death. After he had been in Egypt about two years, the Khedive determined to send an expedition to Darfour, and selected him as the medical officer to accompany the troops. He was warned by a friend that the order of his assignment would be issued the next morning, and that if he went, he would not live to return. He, therefore, had himself put on the sick list, under the care of his assistant, and the order was never served on him. After the expedition was well on its way, he applied for a six months' furlough in order to go to Paris for treatment by an oculist. The furlough was granted, with pay for six months, and on April 6, 1875 he sailed from Alexandria, en route to Paris. On arriving in that city, he placed himself under the care of Dr. Landolt, who, after curing the malady, told him "not to think of returning to Egypt, unless you wish to lose your eyes." In this dilemma he determined to seek authorization to practise medicine in Paris, and through the intervention of Drs. Ricord and Charcot he was made a "licentiate of the University of Paris," and was enabled to offer his services to the public. He succeeded rapidly in securing a liberal patronage, and when his furlough expired he was already established in practice. The Egyptian Minister of War did not accept his resignation, but gave him an honorable discharge, with six months' pay.

Soon after his settlement in Paris, he was called to see a prominent Spanish lady who was suffering with obscure symptoms which a number of local physicians had not been able to diagnosticate or to relieve and had pronounced her case incurable. After a careful examination, he decided that she was suffering from arsenical poisoning, due to the fact that she had been drinking a mineral water containing arsenic for the removal of some blemishes from her skin. This water was discontinued, and the lady recovered. Her husband related the

history of the case to the King of Spain, who immediately created Warren a "Knight of the Order of Isabella the Catholic." He became a popular doctor and had many people of wealth and prominence as patients, both Americans and others, among whom were Vice-President Hendricks, Hon. Severn Teackle Wallis of Baltimore, and Lady Anna Gore-Langton, sister of the Duke of Buckingham, at that time Governor of Bombay, from whom he received a fee of $1,500. Prosperity again knocked at his door and honors were conferred upon him. In 1879 the President of France created him a Chevalier of the Legion of Honor, and in 1882 the Khedive of Egypt appointed him a commander of the Osmanieh, with the decoration of the grade. In addition he received the Order of the Redemption of the Holy Sepulchre of Jerusalem and that of the White Cross of Italy, with the Victor Emanuel Medal. The College of Physicians and Surgeons of Baltimore bestowed the honorary degree of C. M., master of surgery, on him, and the University of North Carolina that of LL.D. in 1884. His friend, Governor Vance, appointed him a special commissioner from the State of North Carolina in 1878, and he was the only State Commissioner to be recognized at the World's Fair held in Paris in that year. Warren met General Grant frequently when he was in Europe on his tour of the world, and he expresses his opinion of him in the following manner: "As a result of these experiences, I have ever since entertained the opinion that General Grant is one of the most extraordinary men that the world has produced, and that his reputation will be more appreciated in history as it is the more thoroughly studied and understood; that it will not only live through the coming ages, but will expand and brighten continually in the lapse of time. Among other things, I found that his admiration for the genius and character of General Lee was not less fervent than my own." Warren's cup of happiness seemed full to overflowing, but impending disaster hung over his head. His wife, who was six months "enciente," went without warning into puerperal eclampsia, and in spite of the efforts of physicians summoned to care for her, died on June 29, 1879. He continued to practice in Paris until his death, which occurred on September 16, 1893. In 1885 he published in Baltimore an autobiography entitled "A Doctor's Experiences in Three Continents," which is a very interesting, though somewhat florid, narrative, from which I have culled most of the incidents noted in this paper.

In my opinion, Dr. Warren was an able, well-educated man; facile in speech and with his pen; skilled in his profession; ambitious, egotistical and contentious. He was the recipient of many honors, and suffered many griefs and disappointments, and his experiences were both varied and extraordinary.

ANNOUNCEMENT

UNIVERSITY OF MARYLAND

Division of Medical Extension

REVIEW COURSES FOR PHYSICIANS

June 1, 1927—June 28, 1927

The Division of Medical Extension of the University of Maryland offers each year a series of short courses to the physicians of the State. These courses are not planned, and will not serve, to enable the practitioner to become a specialist. But it is hoped that they will meet the needs of those who wish to review the fundamental data in some field, and to inform themselves concerning recent advances in methods of diagnosis and treatment.

The duration of the courses is brief—four weeks. Each course, however, has daily meetings of from two to three hours, and there should be sufficient time for discussion and explanation during the demonstrations, and for practice in the various diagnostic procedures.

The morning courses will run from nine to eleven-thirty, and the afternoon courses from one o'clock to three-thirty or later. It will, therefore, not be possible to take more than two courses, and those who so desire may register for only one. There will, in addition, be daily clinics from eleven-thirty to twelve-thirty in medicine, surgery, and the various specialties, which are not a part of the courses, but are open to all the physicians registered. The number of registrants for each course will be limited in order to render instruction more effective.

Information: Questions concerning the courses may be addressed to the—

Dean of the Medical School
University of Maryland,
Baltimore.

Requirements for Admission: The applicant must be a registered physician in good standing. Preference will be given to physicians registered in Maryland.

Enrollment: Applications for enrollement should state the courses selected. It is suggested that such applications be made promptly as the courses will be filled up in the order that applications are received. Address—

Dean of the Medical School
University of Maryland,
Baltimore.

Fees and Tuition: A matriculation fee of $25.00 will be charged to all registrants. No additional fee for tuition will be required of physicians registered in Maryland. For those coming from other States a charge of $50.00 for each course taken will be made.

Registration and Matriculation: Wednesday, June 1, 1927, 8:30 A. M., N. E. corner Lombard and Greene Sts., Baltimore.

DEPARTMENT OF MEDICINE

DISEASES OF THE CIRCULATORY AND RESPIRATORY SYSTEMS

Daily 9 A. M.—11:30 A. M.

(Limited to Six Physicians)

DR. M. C. PINCOFFS DR. C. C. HABLISTON
DR. WM. S. LOVE, JR.

I—Circulatory Diseases.

Three lectures a week. Three periods a week, of one and a half hours each, devoted to the examination of cardiac patients in the wards and dispensaries.

The subjects will be taken up under the following headings:

1. Factors in circulatory diseases: myocardial disease: valvular diseases: arrhythmia: blood-pressure abnormalities.
2. Symptoms: physical signs: instrumental methods.
3. Clinical types of circulatory failure: congestive: vasomotor: anginal.
4. Clinical types of cardiovascular disease: rheumatic: arteriosclerotic: syphilitic: etc.
5. Therapeutic principles.

II—Respiratory Diseases.

Three lectures a week. Three periods a week, of one and a half hours each, devoted to the examination of patients in the wards and dispensaries.

The subject will be taken up under the following headings:

1. Symptoms of respiratory diseases.
2. The technique of physical diagnosis and the interpretation of physical signs.

3. The interpretations of rontgenograms.
4. Clinical types of respiratory diseases.
   a. Tuberculosis of the lungs and pleura.
   b. Acute non-tuberculous diseases: pneumonia: pleurisy: empyema: abscess: infarct: etc.
   c. Chronic non-tuberculous diseases: bronchitis: bronchiectasis: asthma: emphysema: etc.
5. Therapeutic principles.

DEPARTMENT OF MEDICINE

CLINICAL LABORATORY METHODS

Daily 9—11:30 A. M.

(Class Is Limited)

DR. S. L. JOHNSON DR. REED ROCKWOOD
DR. L. A. M. KRAUSE

This course is a review of the routine Clinical Laboratory tests and studies in Urine, Blood, Sputum, Feces, Gastric and Duodenal Fluids, Punctate Fluids, etc. An introduction to some of the more recent, practical Chemical and Metabolic studies is also given. The more common and more or less standard procedures will be taught, making the work as practical as is possible.

The greatest use and main justification for the Clinical Laboratory is its assistance in diagnosis and treatment for the clinician. With this in mind the interpretation of laboratory tests in terms of clinical usefulness is especially stressed. The subject-matter is varied to meet the needs and interests of the physicians registered.

DEPARTMENT OF MEDICINE

PEDIATRIC CLINIC

CHARLES L. SUMMERS, M.D., Professor of Pediatrics.
EDGAR B. FRIEDENWALD, M.D., Clinical Professor of Pediatrics.
C. LORING JOSLIN, M.D., Assistant Professor of Pediatrics.
JOHN H. TRABAND, M.D., Associate in Pediatrics.
HOWARD H. WARNER, M.D., Associate in Pediatrics.
WILLIAM J. TODD, M.D., Instructor in Pediatrics.
CLARENCE E. MACKEE, M.D., Instructor in Pediatrics.
F. STRATTNER OREM, M.D., Instructor in Pediatrics.
WILLIAM G. GEYER, M.D., Instructor in Pediatrics.

Albert Jaffe, M.D., Instructor in Pediatrics.
George A. Knipp, M.D., Instructor in Pediatrics.
Bernard J. Ferry, M.D., Instructor in Pediatrics.
R. M. Hening, M.D., Assistant in Pediatrics.
Marie Kovner, M.D., Assistant in Pediatrics.
J. J. McGarrell, M.D., Assistant in Pediatrics.
Elizabeth B. Sherman, M.D., Assistant in Pediatrics.
Clewell Howell, M.D., Assistant in Pediatrics.
Samuel B. Wolfe, M.D., Assistant in Pediatrics.

COURSE IN INFANT FEEDING

Daily Afternoons

(Limited to Eight Physicians)

This course is intended for the general practitioner and those especially interested in Pediatrics who desire in a short space of time to familiarize themselves with the newer advances in infant feeding. The physicians will work daily, under instruction, in the Babies' and Children's Clinic of the University Hospital, which, with a yearly attendance of over 20,000 patients, affords an unusual opportunity for the observation and treatment of a wide variety of cases. Ward Talks in the University Hospital will be given, thus enabling physicians to observe the care and treatment in detail of nutritional conditions more severe in character. There will be lectures and quizzes three times weekly.

The course will cover the following subjects:

1. The underlying principles of modern infant feeding.
2. Feeding problems in nutritional conditions: marasmus, rickets, pyloric stenosis, the diarrhoeas, etc.
3. Technique of infant feeding: care of the breasts: bottle feeding: preparation of food mixtures: gavage: subcutaneous salt and glucose solution: intraperitoneal salt solution: proctoclysis.

DEPARTMENT OF MEDICINE

GASTRO ENTEROLOGICAL CLINIC

Diagnosis of Diseases of the Gastro-intestinal Tract

Daily Afternoons

(Limited to Eight Physicians)

Dr. T. F. Leitz
Dr. J. H. Ullrich
Dr. T. H. Morrison
Dr. Maurice Feldman
Dr. Milford Levy
Dr. Joseph Sindler
Dr. Z. Morgan
Dr. L. J. Rosenthal
Dr. Waitman Zinn
Dr. Isadore Levy
Dr. Leo T. Brown

The course will be conducted by means of:

1. Lectures and clinics on special topics.
2. Daily study of patients in the dispensaries and on the hospital wards.
3. Laboratory work.

Instructions will be offered in:

1. Methods of history recording in gastro-intestinal diseases.
2. Physical examination of the abdomen.
3. Passage of the stomach tube: test meals: gastric lavage: examination of the gastric contents.
4. Passage of the duodenal tube: drainage of the gall bladder and its significance: duodenal feeding.
5. Examination of the feces.
6. Fluoroscopic and rontgenographical examination of the gastro-intestinal tract. Interpretation.
7. Demonstrations of œsophagoscopy and proctoscopy.

DEPARTMENT OF MEDICINE

METHODS OF DIAGNOSIS AND TREATMENT IN NEPHRITIS, DIABETES AND OTHER METABOLIC DISORDERS

DR. W. H. SMITH — DR. H. M. STEIN
DR. REED ROCKWOOD — MISS MIRIAM C. CONNELLY

The didactic portion of the course will include lectures upon the clinical and metabolic aspects of diabetes, nephritis, hyperthyroidism, etc.

The Metabolic Clinic of the Out-patient Department will be utilized to demonstrate the treatment of ambulant cases, and the Hospital wards will furnish examples of the more severe types. The essential laboratory methods involved in the diagnosis and treatment of these diseases will be taught in the laboratory of the University Hospital.

The calculation and actual preparation of diets will be taught and demonstrated in the Department of Dietetics.

DEPARTMENT OF SURGERY

DR. ARTHUR M. SHIPLEY
DR. HENRY J. WALTON — DR. PAGE EDMUNDS
DR. JOS. W. HOLLAND — DR. FRANK S. LYNN
DR. C. REID EDWARDS

SURGICAL DIAGNOSIS

Daily 9 A. M.—11:30 A. M.

(Limited to Eight Physicians)

This course will be devoted almost entirely to the diagnosis of surgical conditions. Considerable attention, however, will be paid to the treatment of fractures. Minor surgical procedures will be demonstrated, such as: aspirations of the chest, infusions, treatment of minor accident conditions, etc.

From nine to ten-thirty each morning there will be ward rounds and operations. From ten-thirty to eleven-thirty the routine treatment of minor surgical conditions in the surgical dispensary. There will be two clinics each week—on Tuesdays and Thursdays—at eleven-thirty.

Instruction will be given also in the use of the X-ray for the diagnosis of surgical conditions.

DEPARTMENT OF SURGERY

COURSE IN MALE AND FEMALE UROLOGY

(Including Syphilis)

Daily Afternoons

(Limited to Six Physicians)

DR. W. H. TOULSON DR. J. M. HUNDLEY, JR.
DR. H. M. ROBINSON

This course will be given in the dispensaries and on the hospital wards. It will include practical work by the physicians under instruction, short lectures, demonstrations, and operative clinics. Instruction will be given in the technique of urethral injections, instillations, irrigations, catheterization, the use of sounds, filiforms and dilators. Darkfield examination for the treponema pallida, and the technique of intravenous therapy in syphilis will also be taught.

There will be demonstrations of urethroscopy, cystoscopy, catheterization of the ureters, lavage of the kidney pelvis, the use of wax tips and bulbs for the recognition of ureteral strictures and stones. The utilization of the above methods in the diagnosis and treatment of diseases of genito-urinary tract will be systematically presented.

DEPARTMENT OF SURGERY

DISEASES OF THE NOSE AND THROAT*

Dr. Edward A. Looper
Dr. E. E. McKenzie
Dr. W. F. Zinn
Dr. F. B. Anderson

Daily Afternoons

(Limited to Eight Physicians)

In lectures, clinics and dispensary classes there will be offered a brief review of the anatomy, pathology and bacteriology of the nose and throat and a systematic presentation of the fundamental clinical features of the common diseases of the paranasal sinuses, the pharynx, mouth and trachea. The use of the laryngoscope will be taught. Bronchoscopy and laryngoscopy will be demonstrated. The interpretation of X-ray plates will be discussed. The relationship of nose and throat infections to systemic disease will be presented in some detail, and the indications for the various nose and throat operations discussed.

DEPARTMENT OF OPHTHALMOLOGY AND OTOLOGY

DISEASES OF THE EYE AND EAR†

Dr. Harry Friedenwald
Dr. Randolph Kahn
Dr. Harvey Fleck
Dr. J. W. Downey, Jr.
Dr. Joseph I. Kemler

Daily Afternoons

(Limited to Six Physicians)

This course will be given in the dispensary and on the wards of the University Hospital and in the Mercy Hospital. By the method of case teaching instruction will be given in the recognition and treatment of the commoner diseases of the eye and ear. The use of the ophthalmoscope will be taught and opportunities afforded for practice in its use. The relationship of diseases of the eye and ear to systemic diseases will be given special attention so that the diagnostic value of eye and ear examinations may be appreciated.

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* By special arrangement a portion of this course may be combined with a portion of the course in Eye and Ear to furnish a brief review of both subjects.

† By special arrangement a portion of this course may be combined with a portion of the course in Nose and Throat to furnish a brief review of both subjects.

COMBINED COURSE IN OBSTETRICS AND GYNECOLOGY

(Limited to Eight Physicians)

DEPARTMENT OF OBSTETRICS

Dr. J. M. H. Rowland
Dr. D. P. Bowe
Dr. M. A. Novey
Dr. L. H. Douglas
Dr. J. G. M. Reese
Dr. Isadore H. Siegel

THE PRACTICE OF OBSTETRICS

Monday, Wednesday, Friday—9 A. M.—11:30 A. M.

The course will be conducted almost entirely on the wards and in the dispensaries of the hospitals. Brief lectures will also be given. When illustrative cases are not available, manikin demonstrations will be substituted.

The following topics will be systematically presented:

1. Normal and deformed pelves and foetal heads.
2. Abdominal palpation.
3. Diagnosis of pregnancy.
4. Pre-natal care.
5. Complications of pregnancy:
    1. Abortions
    2. Toxemias
    3. Hemorrhages, etc.
6. Mechanism of labor.
7. Conduct or normal labor and puerperium.
8. Care of new-born child.
9. Puerperal infection.
10. Operative obstetrics:
    1. Forceps
    2. Version and breech extraction
    3. Craniotomy
    4. Induction of labor.

COMBINED COURSE IN OBSTETRICS AND GYNECOLOGY

DEPARTMENT OF GYNECOLOGY

DR. W. S. GARDNER DR. J. M. HUNDLEY, JR.
DR. HUGH BRENT

GYNECOLOGICAL DIAGNOSIS

Tuesday, Thursday, Saturday—9 A. M.—11:30 A. M.
Lectures—Pathology—Ward Walks—Operative Clinics

The following subjects will be reviewed and illustrated, in as far as possible, by ward and dispensary cases, and by gross and microscopic pathology:

1. Case history recording.
2. Uterine bleeding.
3. Injuries due to labor.
4. Displacements of the uterus.
5. Extrauterine pregnancy.
6. Cancer of the uterus.
7. Uterine fibroids.
8. Infections of the pelvic organs.
9. Ovarian growths.
10. Gross and microscopic pathology of the pelvic organs.

Wanted—P. & S. Catalogues

The file of P. & S. catalogues at the University is very incomplete, especially the issues prior to 1900. Almost daily inquiries which can only be answered by referring to these catalogues must remain unanswered. Those of you having such in your possession would be conferring a much needed gift upon the University as well as an invaluable addition to the University archives by forwarding them to the dean, Medical School, University of Maryland, Lombard and Greene streets, Baltimore, Maryland. The *Bulletin* takes this opportunity to thank in advance those of you helping to remedy this deficiency.

BULLETIN

OF THE

SCHOOL OF MEDICINE UNIVERSITY OF MARYLAND

"GOOD NEWS"

The University of Maryland, in all of its schools, colleges and departments, will be greatly benefited by the increased appropriations recommended by Gov. Albert C. Ritchie and authorized by the present Legislature. These appropriations are for the biennium beginning October 1, 1927. All general maintenance items will be continued as at present, and there are several increases in maintenance appropriations. But the largest of the appropriation items relate to new construction both at Baltimore and at College Park.

The amount made available for buildings, land, equipment, etc., at Baltimore during the biennium is $595,000. This is the first large appropriation made by the State for the benefit of the University of Maryland Schools in Baltimore. Such an appropriation is sufficient proof that the State is behind its University and it is evidence that the value of the work done in the University for the State of Maryland is appreciated by the Governor and members of the Legislature, and this means by the State as a whole.

Last year there were 329 graduates of our School of Medicine in practice in rural Maryland, as compared with only 94 from all other medical schools combined. Maryland young men and women study medicine in a considerable number of institutions, but more than half of them at the present time are enrolled in the University of Maryland.

In accordance with a general understanding, the main part of the appropriation for the Baltimore Schools—namely, $495,000—will be used for the construction and equipment of a building having offices, classrooms and laboratory space for the Schools of Dentistry and Pharmacy. Temporarily some space in this building may be used also by the Law and Medical Schools. It is planned to provide a new home for the dentists and pharmacists which will be more in accord with their needs than any space they have yet occupied. The new space and improved facilities should enable the Dental School to secure the coveted "A" rating. All University of Maryland friends desire to see this accomplished.

A special item has been provided for remodeling the present Dentistry Building at Lombard and Greene Streets to be used by the Medical School. It may be necessary for the present Pharmacy Building, the old church, to be remodeled as additional space for the Medical School. With this new space improved so as to be in good condition for medical instruction requirements, it will be possible to house practically all of the Medical School departments in the group of buildings at the northeast corner of Lombard and Greene Streets.

The Board of Regents of the University of Maryland are especially grateful to the Governor and the Legislature for providing an appropriation to wipe out the long-standing deficit of $58,800 in the Hospital Operating Account. It will be a relief to have this debt paid and to be able to save the interest that it has demanded annually.

It will mean much to the School of Nursing and the Hospital and indirectly a good deal to the School of Medicine to have the Nurses' Home enlarged, so that all nurses now enrolled can be housed in new and first-class quarters. The difficulty of providing living quarters for nurses has had a serious effect upon the enrollment of the School of Nursing.

The appropriations for new equipment for Medicine, Dentistry and Pharmacy are greatly needed, and will do much to strengthen the work and give new courage to teachers who have long been handicapped. Needless to say, the new equipment will also be appreciated by the student body.

The Governor could not see the way clear to recommend as much as the Board of Regents asked on account of maintenance, but there will be provided an increase of $20,000, which will be applied to the Central Office and will relieve the funds of the four professional schools to the same amount.

A summary, showing present appropriations for the Baltimore Schools which will be continued and increases allowed by the Governor and Legislature, follows:

For Baltimore Schools, present appropriation, $52,500 (Medical School, $42,500; Pharmacy School, $10,000).

This will be increased by $20,000.

The income of the Schools other than from the State Treasury, will be available as heretofore. It amounts to about $350,000 annually.

For the University Hospital, present appropriation, $47,500.

This will be increased by $5,000.

A special appropriation of $58,800 is made to wipe out the old Hospital debt.

The income of the Hospital other than from the State Treasury is about $290,000.

Appropriation for new Laboratory and Classroom Building with land for same and equipment, $495,000.

Reconstruction of the present Dentistry and Pharmacy Building for the Medical School, $30,000.

Equipment for Medical School, $20,000.

Improvements of the University Hospital, $31,000.

Addition for Nurses' Home, $19,000.

The last item will be supplemented by $20,000 raised by private subscription.

The maintenance items are for each year of the biennium and the equipment items are for the two years of the biennium.

Building appropriations for College Park provide for a much needed Library to cost $200,000, also certain improvements on the campus, including paving, new water service and sewers, and a limited amount of additional instructional equipment. The increase for maintenance will be much less than recommended by the Board of Regents, but will provide considerable relief.

The State appropriates annually for instruction work at College Park $227,195.45. This will be increased by $38,804.

No increase is provided for research work at College Park, and none is provided for extension work except $10,000 additional is available for improving and enlarging County Demonstration work and $10,000 is made available for special service in connection with the Canning Industry.

ENDOWMENT FUND

The Board of Trustees of this fund have made the following report for the year 1926. Friends of the University will be pleased to learn that the Fund, though slowly, is gradually growing:

REPORT OF ENDOWMENT FUND
December 31, 1926

	Invested	Cash	Total
Faculty of Physic	$45,265.40	$85.42	$45,350.82
General Endowment	15,146.80	833.65	15,980.45
Katherine Gibson	2,556.99	218.95	2,775.94
Chas. M. Hitchcock	5,000.00	252.12	5,251.12
Leo Karlinsky	3,000.00	256.72	3,256.72
Leon Frank	2,458.31	250.80	2,709.11
Randolph Winslow	2,500.00	80.35	2,580.35
David Street	450.00	454.31	904.31
Burt J. Asper		210.63	210.63
D. A. R.	945.00	364.31	1,309.31
Charles Frick	500.00	646.71	1,146.71
J. C. Hemmeter	7,969.10	308.37	8,277.47
Law		209.86	209.86
Pharmacy		57.47	57.47
Dental		30.12	30.12
Ashman		18.92	18.92
J. Friedenwald	9,998.04	977.39	10,975.43
I. and C. Cohen	4,920.14	334.75	5,254.89
German H. H. Emory		521.86	521.86
J. M. H. Rowland	4,522.22	707.81	5,230.03
E. and L. M. Zimmerman	1,003.47	1.53	1,005.00
	$106,235.47	$6,821.05	$113,056.52
Total of All Funds, December 31, 1926		$113,056.52	
Total of All Funds, December 31, 1925		101,920.24	
Increase for 1926			$11,136.28

ALUMNI ASSOCIATION ACTIVITIES

G-E-T—T-O-G-E-T-H-E-R-S

There will be in May greater activity in our organization than ever before. In Columbus, Ohio, May 10, 11 and 12, and in Syracuse, N. Y., April 19, there will be gatherings of our men of these States during the meetings of the State Medical Societies. The Ohio meeting will be in charge of Field Secretaries Drs. Harry Streett and John W. Metcalf, while the one in Syracuse will be under the auspices of Dr. Milton E. Gregg, Field Sacretary, and Drs. E. G. McFarland and Lewis Cole, officers of the very active chapter in that State. In response to an invitation from Dr. Gregg, Dr. Charles W. Maxson, our President, will represent the Association at Syracuse. If you live in either of these States, do not fail to respond promptly when you receive your notice asking you to be present.

In Washington, D. C., during the National Meeting of the American Medical Association from May 16 to 21, we shall have a registration booth at the Main Auditorium with secretary in constant attendance, and also, for the convenience of our men, we shall have headquarters at the Raleigh Hotel, which should be used to the limit by our graduates.

On Wednesday evening, May 18, at the Raleigh Hotel, we shall have what we intend to make the best banquet the University has ever had. The principal speaker will be Dr. Raymond A. Pearson, President of the University, whose work since taking charge only a few months ago should make it an honor for our men to greet him. You will get a letter from us later, asking you personally to be present. Set this evening aside, now, or you will regret it.

Dr. N. P. Barnes, our Field Secretary in Washington, D. C., is acting for these activities, and will, we know, be remembered by most of our members as one of our most active workers.

We wish, also, to announce an activity of the splendid organization known as the Baltimore Medical Club of New York City—mentioned in length in our last issue—which will take place at the Astor Hotel in New York City, April 21. The

speakers of the evening will be Dr. Dean Lewis, Professor of Surgery at the Johns Hopkins University, and Dr. O. S. Lowsley, of New York. The officers of the club are: Dr. David E. Hoag, President; Dr. Dougal Bissell, Vice-President, and Dr. W. B. Pritchard, Chairman of Executive Committee.

In response to a very courteous invitation from the officers of that organization, the Alumni Association is sending a delegation to represent them at this affair.

ALSO, do not forget our meeting in Baltimore in June. You will hear from us later.

Any information regarding any of these announcements may be obtained from the office of the Medical Alumni Association upon request.

FIELD SECRETARIES

The Executive Committee of this Association concluded some time ago that we should have representatives in different localities to facilitate our work and to arouse interest in our Association. In line with this we sent out letters to men all over the country, requesting them to act in this capacity. In evidence of the more than gratifying results, a list of the acceptances is tabulated below:

Dr. Lloyd Noland——Fairfield, Ala.
Dr. Fitz R. Winslow——Hayden, Ariz.
Dr. Arthur T. Newcomb——44 S. Marengo Ave., Pasadena, Cal.
Dr. Noble Price Barnes——The Arlington Hotel, Washington, D. C.
Maj. Wm. Lee Hart——U. S. A., Medical Corps, Washington, D. C.
Dr. Charles W. Roberts——20 E. Linden Ave., Atlanta, Ga.
Dr. W. M. Mitchell——Parma, Idaho.
Dr. Alan G. Brooks——Robinson, Ill.
Dr. J. Holmes Smith, Jr.——Maison Blanche Bldg., New Orleans, La.
Dr. E. E. Wolff——Cambridge, Md.
Dr. George O. Sharrett——119 Bedford St., Cumberland, Md.
Dr. Edward P. Bernstein——10 Peterboro St., Detroit, Mich.
Dr. J. D. Crane——Ishpeming Hospital, Ishpeming, Mich.
Dr. A. Bedell Shoemaker——7 Marlboro St., Boston, Mass.
Dr. Porter P. Vinson——Mayo Clinic, Rochester, Minn.
Dr. Wm. R. Rogers——Bristol, Va.
Dr. Rufus S. Kight——Taylor Bldg., Norfolk, Va.
Dr. Arthur W. Deal——Lewiston, Mont.
Dr. Allen Henry Wright——Wilmington, Vt.
Dr. John S. B. Woolford——Roswell, New Mexico.
Dr. Louis Winfield Kohn——427 Park Ave., New York City.
Dr. R. Richard Paganelli——25 Fifth Ave., New York City.
Dr. E. Milton Gregg——Mottville, N. Y.
Dr. Paul Foreman Wiest——New Medical Building, Asheville, N. C.
Dr. Thomas W. Seay——East Spencer, N. C.
Dr. John W. Metcalf——East Daniel St., Toronto, Ohio.
Dr. Harry Streett——Litchfield, Ohio.
Dr. C. C. Hoke——Petroleum Bldg., Tulsa, Okla.
Dr. E. N. Bocanegra Lopez——Box 779, San Juan, Porto Rico.
Dr. Wm. A. Ostendorf——Moore Bldg., San Antonio, Texas.
Dr. Rush B. Stevens——Medical Arts Bldg., Salt Lake City, Utah.
Dr. Pearce Prentiss——South Wayne, Wis.

We wish, particularly, to call attention to the work of Dr. E. N. Bocanegra Lopez, of San Juan, P. R., and his associates. In response to our letter, he immediately got in touch with a number of our graduates and requested the State Board Authorities to give him the names of our graduates in Porto Rico to facilitate the work. In his letter to us he states that they intend to see each man, personally, to request that he join the Association. Further, they contemplate an University Club, which will include all graduates of all departments as members. It is this sort of interest that will make this a real Association.

In subsequent issues we shall take great pleasure in calling the attention of our readers to work being done in other sections by our graduates. Get in touch with the Secretary of your district and offer him your assistance.

Further appointments will be made and published from time to time.

REUNIONS

It is felt by our Executive Committee that one of the best possible ways of stimulating and retaining the interest of our graduates is by having reunions of classes, in which friendships may be renewed, after years of separation, and in which a man's interest in his Alma Mater may be revived. Consequently we are desirous of having such reunions during the Annual Meeting and banquet in Baltimore each June—around the time of graduation, when the graduating class is taken in as members of the Alumni in toto.

We wish to credit Dr. H. Laurence Wheeler, who graduated in the class of 1917, University of Maryland, for this suggestion, which we feel is an excellent one, namely: to endeavor each year, particularly to have a reunion of the class that has been out for ten years. This year the class of 1917 will have such a reunion, as a result of the splendid work of Dr. Wheeler to get his class together.

The class of 1877 of the University of Maryland will hold a reunion at our annual banquet, June 4, in Baltimore. This should be of the greatest importance to the graduates of that year in view of the fact that it represents the "Golden Jubilee" year of that class. Dr. Henry F. Hill, 3711 Liberty Heights Ave., Baltimore, is in charge of the arrangements.

There will be a reunion of the class of 1903, P. & S., at the time of the A. M. A. meeting in Washington in May. A special table will be reserved for the class, and on Friday, following the meeting, the members of the class will spend the day in

Baltimore, where they will meet their old teachers and where a class banquet will be held Friday night. Dr. A. F. Ries, 24 S. Broadway, Baltimore, Md., is chairman in charge.

There will also be a reunion of the class of 1912, University of Maryland, which is to be held in Baltimore for three days —May 20, 21 and 22 (Friday, Saturday and Sunday). Dr. Moses L. Lichtenberg, 2224 Madison Ave., Baltimore, Md., is in charge of arrangements.

PLEASE NOTE: Personal invitations have been sent out by those in charge of the arrangements for these "reunions" to the members of the respective classes, but in the event that any member of any one of these classes should fail to receive personal invitation, we ask that he get in touch with the one in charge, or with this office, as each class should have as many present as possible.

ALUMNI OFFICE

The Executive Committee of the Association wishes to announce that we now have a permanent office at the Administration Building, Lombard and Greene Streets, which is in charge of a full-time secretary. It is our desire to aid in every way possible any of our graduates who may be visiting Baltimore at any time. While visiting the University do not fail to stop in and register, and do not hesitate to make use of the facilities of our office, whether for hotel accommodations, making appointments with local men, getting information as to clinics or whatnot.

DEATHS

Dr. Samuel Allen Hardman, Baltimore; B. M. C., class of 1911; aged 39; died, November 11, 1926, of a fractured skull, received when struck by an automobile.

Dr. Okey R. Davis, Bluefield, Va.; P. & S., class of 1907; aged 47; died in January, 1927, of a self-inflicted wound.

Dr. F. L. Campbell, Jeffersonston, Va.; P. & S., class of 1891; aged 61; died, January 26, 1927, of dilatation of the heart.

Dr. John B. Watson, Jr., St. Mary's, W. Va.; P. & S., class of 1887; aged 64; died, November 28, 1926, of heart disease.

Dr. John T. B. Hyslop, Belle Haven, Va.; class of 1885; aged 62; died, January 7, 1927.

Dr. Thomas B. Hall, Halethorpe, Md.; Washington University School of Medicine, class of 1875; died, December 19, 1926, of cerebral hemorrhage.

Dr. Henry E. Ganiard, LeRoy, N. Y.; B. M. C., class of 1896; aged 67; died, January 8, 1927, of cerebral hemorrhage.

Dr. Orlando A. Jones, Sharon, Pa.; P. & S., class of 1886; World War Veteran; aged 63; died, December 16, 1926.

Dr. John Rawson Pennington, Chicago, Ill.; class of 1887 and Kentucky School of Medicine, 1891; chairman of the Section on Gastro-Enterology and Proctology of the American Medical Association, 1922-1923; professor of operative surgery and rectal diseases, Chicago College of Medicine and Surgery, 1908-1912; past-president American Proctoscopic Society; author of "Treatise on Diseases and Injuries of the Rectum, Anus and Pelvic Colon," 1923; aged 68; died, February 3, 1927, of angina pectoris and thrombosis of the coronary artery.

Dr. Frank M. Hisey, Edinburg, Va.; P. & S., class of 1881; aged 71; died, December 29, 1926, of chronic myocarditis.

Dr. John Hoy Sisler, Detroit, Mich.; B. M. C., class of 1898; aged 60; died, December 12, 1926, following an operation for a perforated gastric ulcer.

Dr. Benjamin F. Dillard, East Bangor, Pa.; P. & S., class of 1881; aged 71; died, September 30, 1926, of chronic myocarditis and pneumonia.

Dr. William Edmund Simmons, Boston, Mass.; P. & S., class of 1886; aged 74; died, December 29, 1926.

Dr. Clement Lanier Richardson, Jacksonville, Fla.; P. & S., class of 1880; Confederate Veteran; aged 85; died, December 3, 1926.

Dr. James Marion Lovett, Huntingdon, W. Va.; class of 1892; aged 61; died, December 25, 1926.

Dr. Edward H. Moore, Newark, N. J.; P. & S., class of 1892, and University of Pennsylvania Medical School, 1893; served during World War; aged 59; died, December 22, 1926.

Dr. Robert John Young, Snow Shoe, Pa.; P. & S., class of 1889; aged 64; died, August 5, 1926, of cerebral hemorrage.

Dr. George Leo Duane, Baltimore, Md.; B. M. C., class of 1896; aged 52; died, December 31, 1926, following an operation for appendicitis and cholecystitis, of mitral insufficiency.

Dr. Michael Siebert Butler, Hedgesville, W. Va.; class of 1874; aged 72; died recently of carcinoma of the stomach.

Dr. Bernard Richard Kelly, Watervliet, N. Y.; class of 1915; served during the World War; aged 36; died, August 24, 1926, of diabetes and myocarditis.

Dr. William H. Moorhead, Stuttgart, Ark.; B. M. C., class of 1886; veteran of the Spanish-American War; aged 62; died, December 2, 1926, of angina pectoris.

Dr. Clarnede Pleasant Shirkey, Charleston, W. Va.; P. & S., class of 1896; aged 51; died, December 3, 1926, of pneumonia.

Dr. Samuel Charles Dudley, Church Hill, Md.; class of 1867; formerly a druggist; aged 83; died, November 23, 1926, of heart disease.

Dr. William W. Rowan, Ouray, Col.; P. & S., class of 1878; aged 77; died, November 19, 1926.

Dr. Thomas J. Phillips, Griffin, Ga.; B. M. C., class of 1897; aged 56; died, February 20, 1926, of a self-inflicted bullet wound.

Dr. James J. L. McCullers, McCullers, N. C.; P. & S., class of 1886; aged 76; died, December 26, 1926.

Dr. Ethan Allen Gearhart, Allentown, Pa.; P. & S., class of 1884; aged 69; died, February 8, 1927, of pneumonia.