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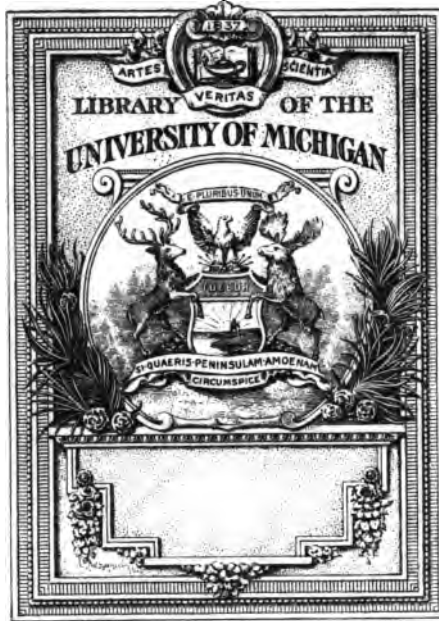
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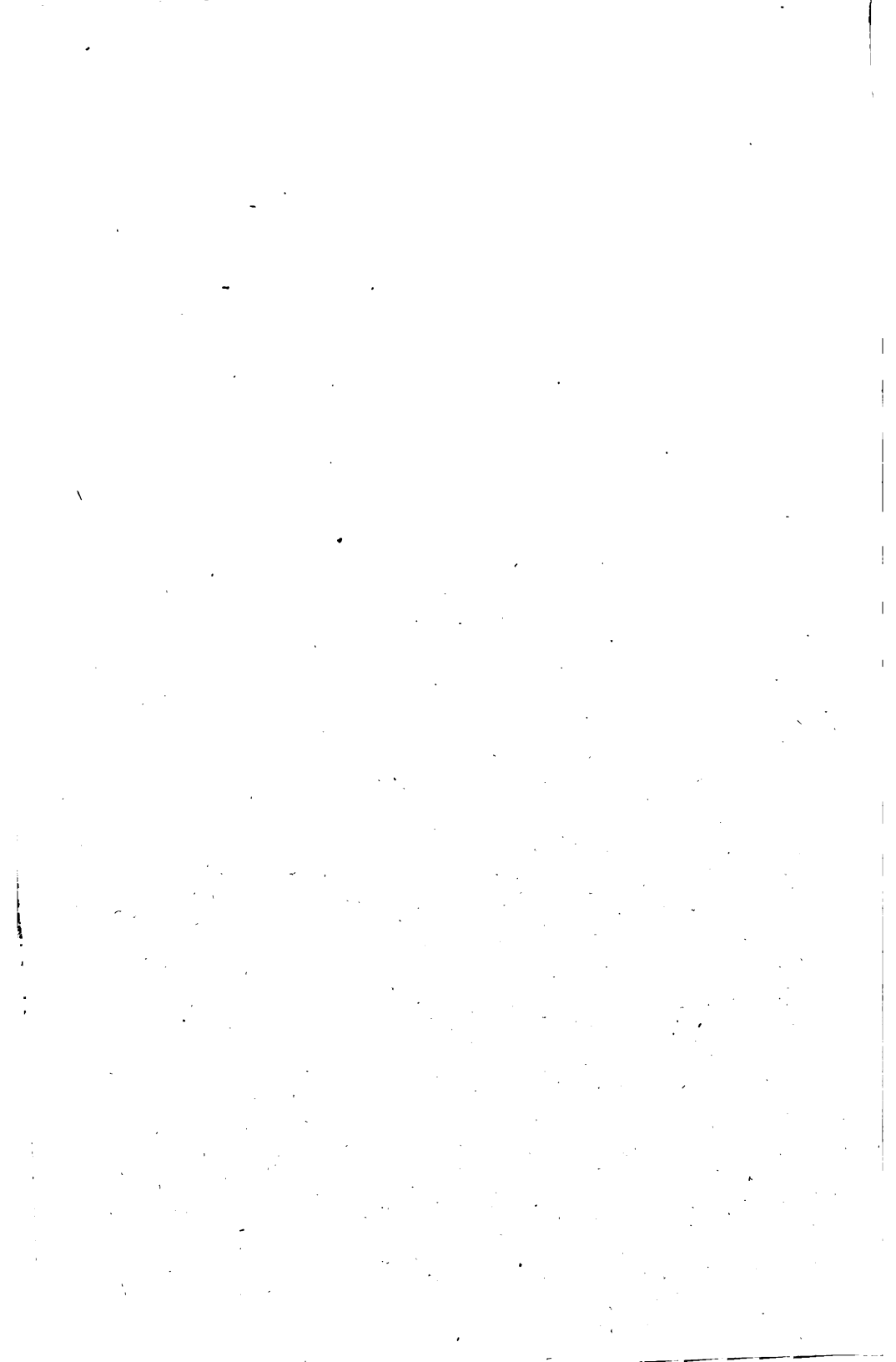
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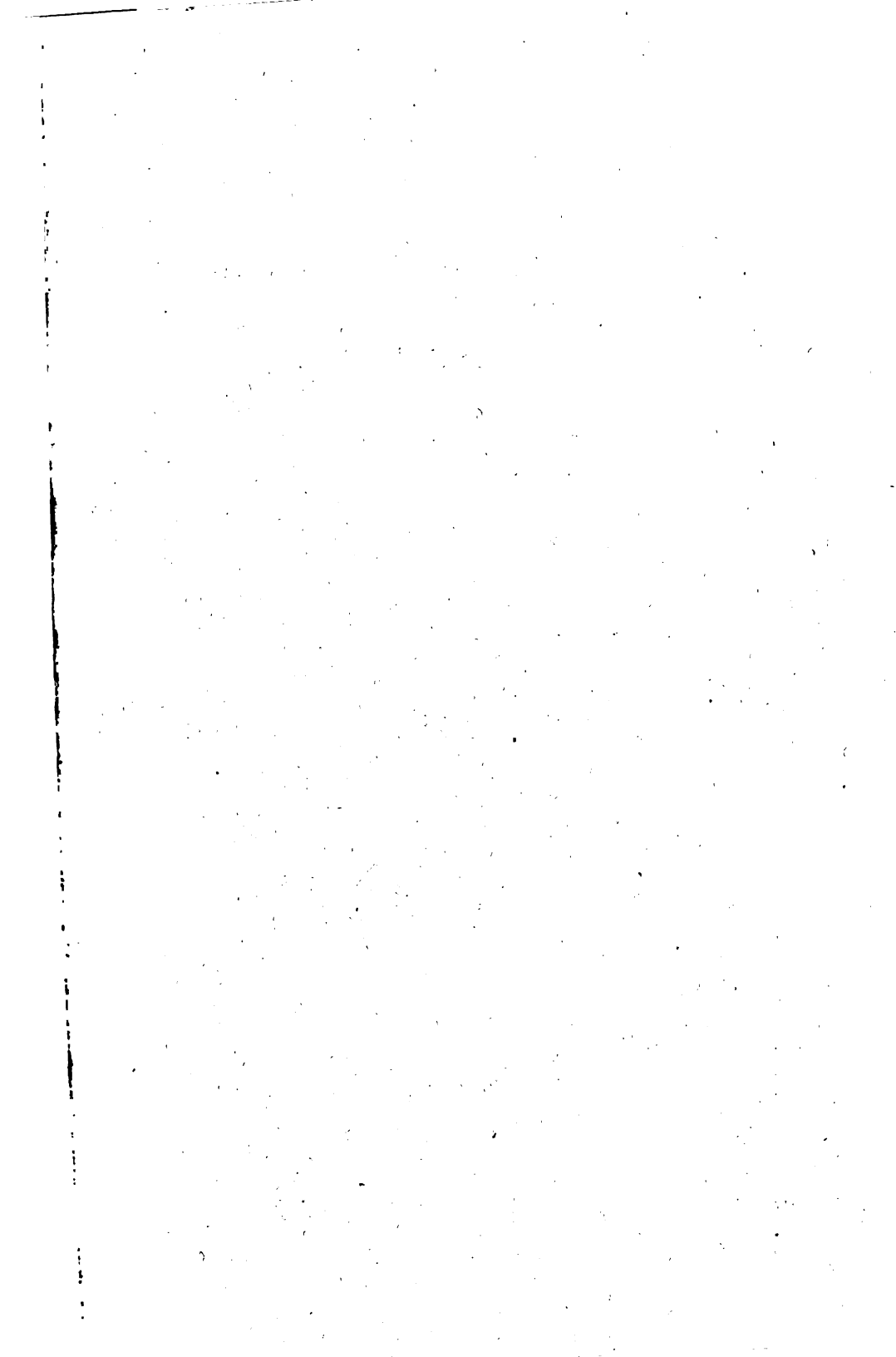
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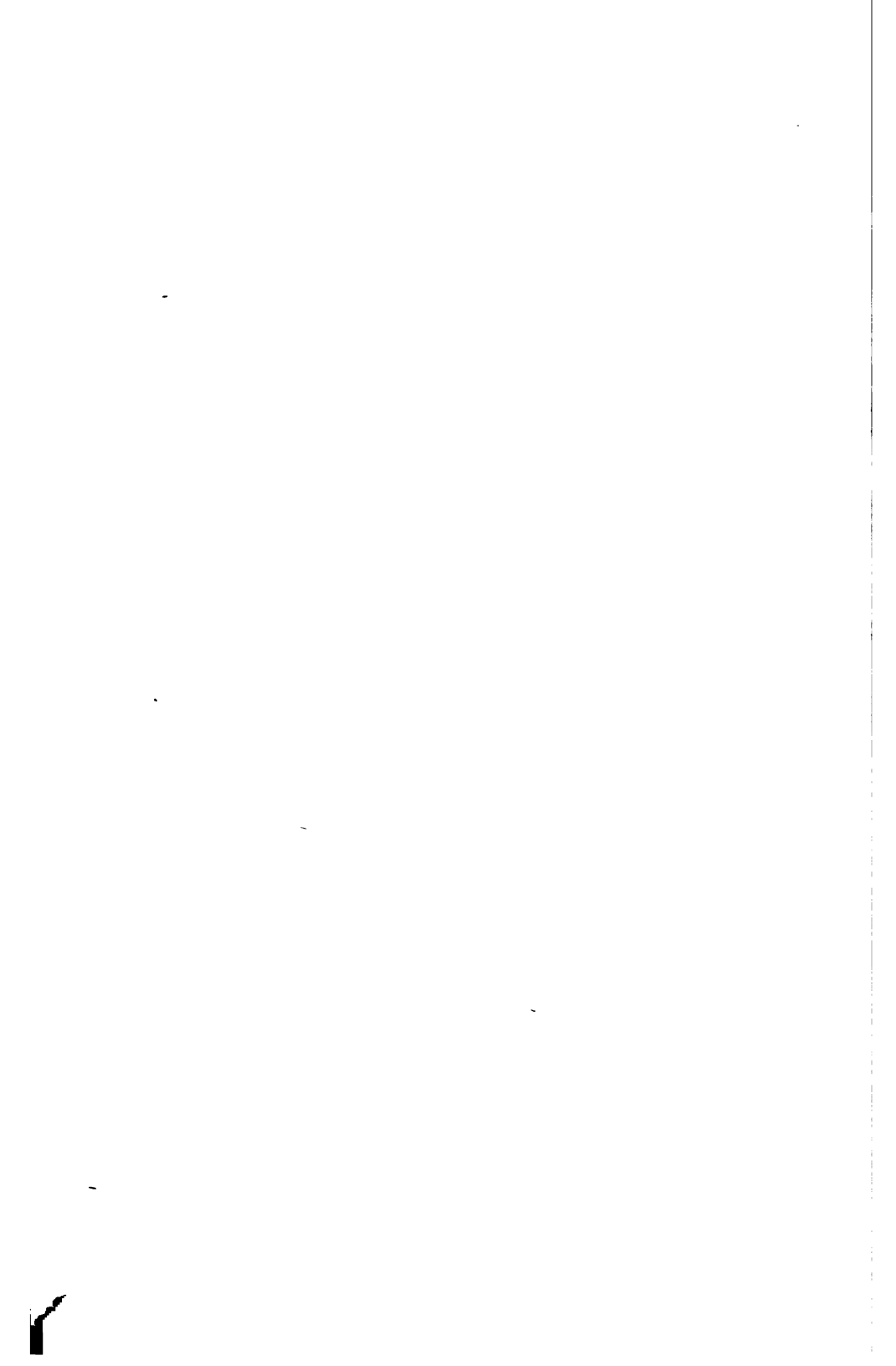
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AND

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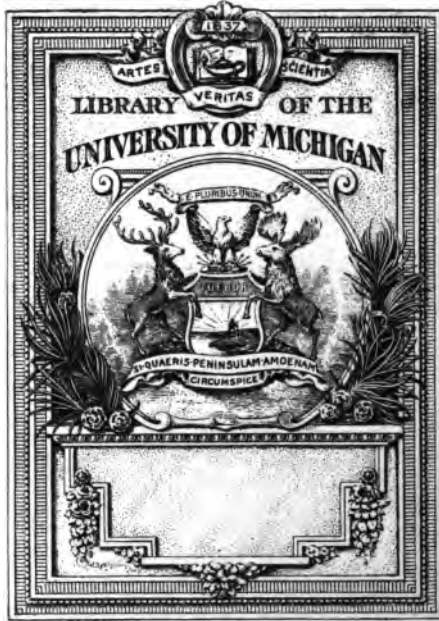
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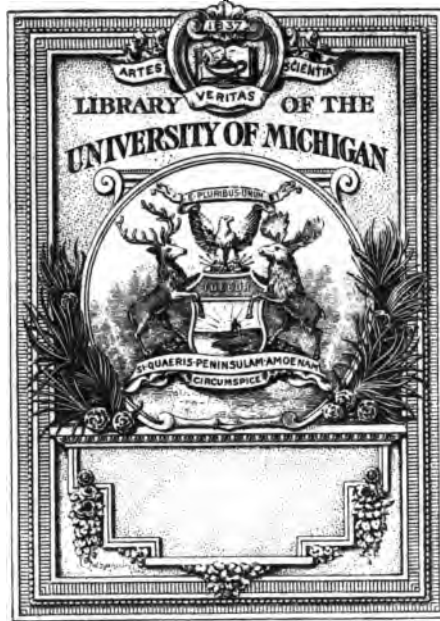
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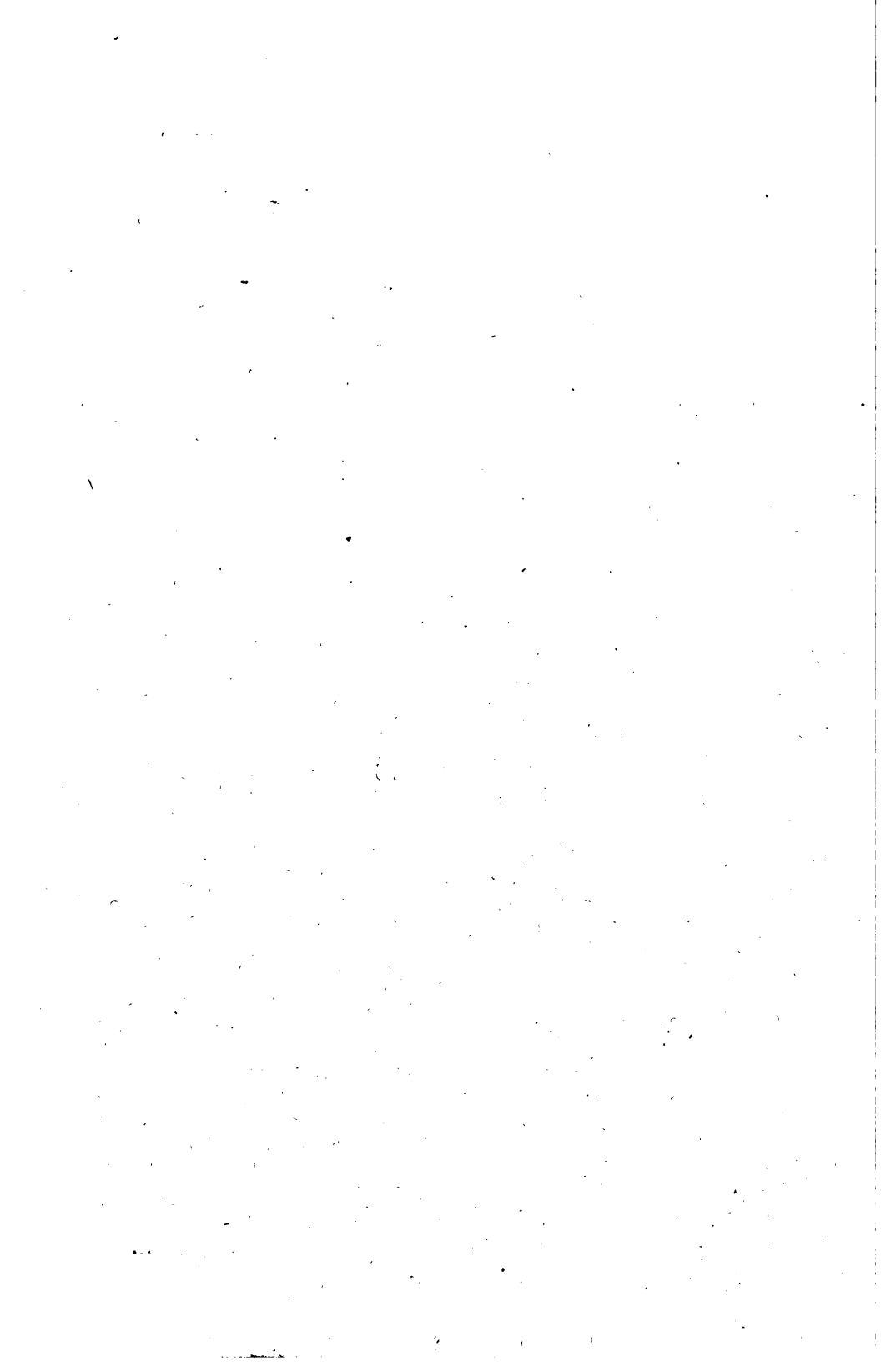
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- 1888 HAWKES, EDWARD JOHN, L.R.C.P., L.R.C.S., L.M.Edin.; 44, West Cliff Road, Ramsgate.
- 1886 HAYLE, THOMAS HAHNEMANN, M.B.Lond.; 154, Drake Street, Rochdale.
- 1892 HAYWARD, CHARLES WILLIAMS (Barrister-at-Law), M.D., C.M.Edin., D.P.H.Camb., M.R.C.S.Eng., L.R.C.P. Lond.; Surgeon, and Surgeon to the Throat, Nose and Ear Department, Hahnemann Hospital, Liverpool; 117, Grove Street, Liverpool.
- 1892 HAYWARD, JOHN DAVEY, M.D.Lond., M.R.C.S.Eng., L.S.A.; Consulting Surgeon to the Hahnemann Hospital, Liverpool; Leyfield Priory, West Derby; 15, Prince's Avenue, Liverpool. *Liverpool Branch.* (P. 1897. V-P. 1899.)
- 1868 *HAYWARD, JOHN WILLIAMS, M.D.St. And., M.R.C.S.Eng., L.S.A., M.D. (Hon.) New York; Consulting Physician and Lecturer on Tropical Diseases, Hahnemann Hospital, Liverpool; 61, Shrewsbury Road, Birkenhead. *Liverpool Branch.* (P. 1895. V-P. 1897. C. 1892-97.)
- 1885 HILBERS, HERMANN GERHARD, B.A.Camb., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg.; Honorary Physician to the Sussex County Homœopathic Dispensary; Honorary Physician Crescent House Convalescent Home; 49, Montpelier Road, Brighton.

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- 1861 *HUGHES, RICHARD (*Editor*), M.D. (Hon.), L.R.C.P.Edin., M.R.C.S.Eng.; Northfield, Albury, Guildford. (P. 1887. V.-P. 1885-6. S. 1879-84. C. 1892-96.)
- 1892 HUXLEY, JOHN CHARLES, M.D., C.M.Aberd.; 91, Harborne Road, Edgbaston, Birmingham.
- 1882 *JAGIELSKI, VICTOR APOLLINARIS, M.D.Berlin, M.R.C.P.Lond.; 14, Dorset Square, W.
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- 1894 *JOHNSTONE, JAMES (*Joint Hon. Secretary*), B.A., F.R.C.S. Eng., M.B., C.M., D.P.H.Aberd.; Assistant Surgeon and Assistant Physician for Diseases of Women to the London Homœopathic Hospital; 26, Sheen Road, Richmond, Surrey. (C. 1896-97. Sec. 1898-1901.)
- 1887 †JONES, DAVID OGDEN ROEBUCK, M.D.Trin. Coll., Toronto, L.R.C.P.Lond.; Physician to Grace Hospital (Homœopathic); 126, Carleton Street, Toronto, Canada.
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- 1850 *MACKECHNIE, JOHN HAMILTON, M.D.St. And.; Physician to the Hahnemann Free Dispensary, Bath; Hartley House, Manvers Street, Bath. (P. 1885. V.-P. 1872. S. 1867-69.)
- 1893 *MACNISH, DAVID, M.A., M.B., C.M.Edin.; Assistant Physician to the London Homœopathic Hospital; Physician to the Kensington, Notting Hill and Bayswater Homœopathic Dispensary, W.; 4, Leinster Square, W.
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- 1892 MAHONY, EDWARD, M.R.C.S.Eng., L.S.A.; Honorary Medical Officer to the Hahnemann Hospital, Liverpool; 30, Huskisson Street, Liverpool.
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- 1895 REID, ARTHUR LESTOCK (*Council*), M.R.C.S.Eng., L.R.C.P. Lond.; Assistant Physician to the London Homœopathic Hospital; Thornborough House, Watford.
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- 1892 ROCHE, WILLIAM, L.R.C.P.I., L.M., M.R.C.S.Eng.; The Limes, 10, Warwick Road, Upper Clapton, N.E.
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- 1880 SANDBERG, ARTHUR GREGORY, M.D. (Hon.) Verm., L.R.C.P., L.R.C.S., L.M.Edin.; 151, Brixton Hill, S.W.
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- 1893 WILDE, FREDERICK GEORGE STANLEY, L.R.C.P., L.R.C.S., L.M.Edin.; Physician to the Cheltenham Homœopathic Dispensary; Ingleside, Bayshill, Cheltenham.
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- 1892 WILKINSON, CLEMENT JOHN, M.R.C.S.Eng., L.S.A.; 3, Osborne Villas, Windsor. (C. 1898-99.)
- 1892 WILLIAMS, EUBULUS, M.D.St.And., M.R.C.S.Eng., L.M., L.A.C.; Physician to Muller's Orphan Houses; 1, Lansdowne Place, Clifton.
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A PRESIDENTIAL ADDRESS ON RECENT ADVANCES IN THE DIAGNOSIS AND TREATMENT OF CERTAIN GENITO-URINARY DISEASES.¹

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GENTLEMEN,—I am not aware whether the choice of a subject for the Presidential Address has presented the same difficulties to my predecessors in this chair as it has done to me. Anyway, I must confess that for me the selection of suitable material worthy of bringing before you, and occupying your attention through the prescribed limits, was by no means a light undertaking.

Not being blessed by Fortune with “the pen of a ready writer” who could deliver himself of an interesting and intellectual address upon general topics, and working upon lines of practice lying mainly in ways which are surgical,

¹ Delivered at the opening of the Session, 1900-1901, October 4, 1900.

you will perhaps understand how limited was my choice, and that it was with no light heart that I entered upon this undertaking.

I am, however, encouraged by the knowledge that my colleagues in this Society are ever willing to lend attentive ears to any subject of professional interest, and, moreover, that they are in the habit of judging more according to the good intentions than by the achievements of those who address them in such meetings as these. Relying, therefore, upon your good nature, I will endeavour to give you some account of the progress which has been made in recent years in the diagnosis and treatment of diseases of the genito-urinary organs, and will, in the first place, invite your attention to the consideration of

SOME POINTS CONNECTED WITH THE SURGERY OF THE URETER.

Of the whole genito-urinary tract, no portion has received, during the past few years, so much attention as the ureter, and it is probable that more advance has been made in this than in any other portion of the urinary apparatus. It is particularly worthy of note that this advance has had a conservative tendency. The aim has been to remedy the defect at the site of the lesion, and thus save the secondarily involved kidney, which would in earlier days have required removal, or would have, in the long run, led to a fatal termination.

Amongst the operations which have been performed, and are gradually becoming classical, is incision of the ureter for removal of an impacted calculus; and in connection with this it is interesting to note that the first to perform the operation was a general practitioner, Dr. Kirkham, of Downham Market, who saved a patient suffering from calculous suppression of urine by removing a stone which had become impacted low down in the ureter. A calculus impacted in this tube usually lodges in one of three positions: at the infundibulum, at the brim of the pelvis, or at the vesical end of the ureter. In the male, a stone in the first position can

be attacked by the ordinary lumbar incision; when in the second position by an incision in the iliac and inguinal regions, working entirely behind the peritoneum; whilst a stone impacted at the vesical opening may be dealt with through a suprapubic incision.

In the female, the vaginal route can be adopted, if the stone can be felt bi-manually in the lower three inches of the ureter, but does not project into the bladder. If the stone be located at or about the pelvic brim, it can be reached through an incision, similar to that made for retro-peritoneal ligation of the external iliac artery. Trans-peritoneal operations are inadvisable, and should only be done for the sake of exploring the ureter either during an abdominal section done for some other purpose, or when the ureter has been injured during some intra-abdominal operation. In this hospital I believe Dr. Neatby was the first to cut down upon an injured ureter transperitoneally for the purpose of re-implanting it in the bladder.

It is of great importance to recollect that impacted ureteral calculi may be the cause in females of prolonged and protracted pelvic pain.

Dr. Sutherland, in the *Medical Press* of May 30, reports three such cases. These had been diagnosed as instances of chronic oophoritis, and in one the ovary on the side of the lesion had been removed without giving relief. The sudden passage of calculus into the bladder was followed by instant cessation of the pain, which in one had lasted over a year. This condition is of more interest to gynecologists than to others, but since such cases may occur in the practice of any of us, it is well to bear in mind the possibility of such a lesion. The calculus, in such cases, would be impacted either at the pelvic brim or between that spot and the opening of the ureter into the bladder; and in this connection the following remarks of Howard Kelly are particularly noteworthy. He says:—

“The ureter can be palpated through the anterior vaginal wall from its termination in the bladder up to the point where it passes beneath the broad ligament. It can be rolled in the loose cellular tissue under the index finger, or,

often better, bi-manually, and in advanced pregnancy, on the head of the child like a narrow tape or flattened cord without hardness. It must not be mistaken for the obturator artery or nerve, or the upper border of the levator ani, or fibres of the obturator muscle, or the rim of the foramen. A diseased ureter becomes nodular and thickened, and is peculiarly prone to be mistaken for cellulitis or adherent ovary. In a large percentage of cases under treatment for cystitis and irritable bladder, the disease really is tender and thickened ureters, and palpation will detect the hard and cord-like tube, and cause the characteristic complaint of intense desire to micturate. An enlarged ureter can easily be further palpated per rectum behind the broad ligament, and followed from there up over the posterior pelvic wall."

In certain cases of advanced pyelitis the whole of the ureter has been removed, along with the affected kidney, with complete success. This is of considerable importance and a distinct advance, for not a few cases are on record where, after removal of a suppurating kidney, the septic ureter which has been left behind has remained as a suppurating sinus for which bladder infection has been kept up, and eventually septic pyelitis of the remaining kidney has resulted.

Organic stricture of the ureter is a condition which has lately been dealt with by making an anastomosis between the portions of the tube above and below obstruction. Of course this is only of value when the kidney has not had its secreting portion disorganised beyond recovery by the pressure of the secreted urine.

Upon the table is a specimen of a kidney which I successfully removed, together with a portion of the ureter, which shows the latter completely closed by a fibrous stricture, the kidney itself being merely a cyst. I have met with one other case in which there was complete obstruction of the ureter, evidently of long standing, the kidney being converted into a sac, which had shrunken up to half the size of the normal organ, and contained a number of black crystals, probably uric acid. This case is an interesting one, as the patient died of heart disease, and no mention was made of kidney trouble during life.

In dealing with the surgery of the ureters, some mention should be made of ureteral catheterisation. This has been done both for diagnostic and therapeutic purposes. In the latter case, the ureter has been in some cases repeatedly catheterised, and irrigated, in order to cure ureteritis and pyelitis. It has been performed both from the vesical and renal end; in the former by direct vision through an endoscopic tube in the female (Kelly's method), or by Nitze's ureteroscope in the male; in the latter, *i.e.*, from the renal end of the tube, through an incision made into the pelvis of the kidney.

For purposes of diagnosis, it is performed from the vesical end. In the female this is not very difficult, but it requires practice; in the male it is much more troublesome. I have myself twice catheterised the ureters in the female, but I did not find it an easy matter. In one case the result was negative; but in the other, the patient presenting the symptoms of pus in acid urine with an apparently normal bladder and no localising kidney symptoms, whilst the urine for the right side was healthy, the left contained pus and pointed to the side of the lesion. Unfortunately, the patient refused an operation, so we were unable to ascertain the cause of the trouble.

TUBERCLE OF THE GENITO-URINARY TRACT.

Advance in the treatment of tuberculous lesions of the genito-urinary apparatus has proceeded upon similar conservative lines as we have seen to be the case with ureteric diseases.

It is no longer considered good surgery to excise *in toto* a partially tuberculous testis and epididymis, unaccompanied by evidences of infection in the seminal vesicles or prostate. Here a thorough scraping out of the tuberculous focus, and free use of iodoform, is usually sufficient to arrest the disease. There is no doubt that for some time after the commencement of the disease its localisation is within bounds sufficiently narrow to justify such half measures, and the result of such treatment bears out this supposition. In

the early stages of tuberculous epididymitis, where only a small nodule of the disease is present, injection of iodoform emulsion into the diseased focus has been eminently successful.

The conservative tendency appears to have had some influence upon the surgery of tuberculous kidney. Complete nephrectomy is giving way to free erosion or removal by excision of the affected areas. Mr. Henry Morris has had some very successful cases of this nature. Apart from lessening the severity of the operation, this plan has another advantage over nephrectomy in that we are never able to say with certainty whether or not the opposite organ is diseased. In about 50 per cent. of all cases it is, and it therefore behoves us to exercise great care in deciding what measure we should adopt. In any case early diagnosis is of the utmost importance, and it is just here that we so often have to admit of defeat, for the demonstration of tubercle bacilli in the urine is not always easy in the early stage.

The reason for this is probably found in the fact that when a focus of tubercle exists in the cortex of the organ only, the bacilli do not enter the pelvis, and hence the urine is free from them. When, however, the pelvis is attacked primarily, the bacilli are more often present in the urine early in the course of the disease.

The symptoms of early renal tuberculosis closely resemble those of stone in the kidney. Renal pain radiating to the testis, groin, and thigh, occasional severe colic, the blood and pus in the urine, the frequency of micturition, and the penile pain occurring after evacuation of the bladder, are common to both diseases. Later, however, the tubercle manifests itself in the bladder itself, and eventually the seminal vesicles, prostate and epididymis, show deposits of tubercle. Fenwick considers the leading indications for the diagnosis of early renal tuberculosis to be found in the family history of the patient; the appearance of pus in the urine very soon after, if not coincidentally with, the renal pain; and the powerlessness of absolute rest to affect or subdue the symptoms.

Besides these, it may often be noted that the tuberculous

patient is always ailing; he never feels well, is anæmic, and easily tired, whereas the calculous patient is often in robust health, and even the hæmorrhage does not seem to pull him down very much, his chief trouble being the attacks of colic.

Passing from tuberculous disease of the kidney, I would draw your attention for a few moments to a like affection of the bladder. From the period of its first recognition up to the present time, this has always been looked upon as a most incurable trouble, and with much reason. The cause of this intractability is not difficult to understand when we remember that the bladder is an organ which can scarcely be said ever to have a resting period. It follows that any ulceration involving the submucous or muscular tissue is not likely to get much chance of undergoing a cure. One can picture the worrying of such an ulcer by the constant contraction of the muscular fibres of the viscus during each act of micturition.

As a result of this constant irritation, and partly also owing to the infiltrating nature of the disease itself, much inflammatory induration of the bladder walls results, and it is not long ere the bladder fails as a distensile organ, and frequent and painful micturition become prominent symptoms.

In such a state the patient's condition is truly pitiable; and yet even at this period spontaneous cure has occurred, probably owing to the fact that the bladder is no longer capable of distension or contraction, and that it acts no longer as a temporary reservoir, as in health, but as a mere aqueduct. Of course, recovery under such conditions does not signify a return to the *status quo ante*, for the bladder never regains its distensibility, and the patient's condition is scarcely an improvement on the previous diseased state.

The diagnosis of tuberculous ulceration of the bladder in its earlier stages is often not an easy matter. When the tuberculous process has invaded adjacent organs, of course, its recognition is easy, but treatment then is not likely to be of any service. The earlier symptoms closely correspond to those of stone in the bladder, but there is usually more

bleeding, a symptom which comes on early as a rule, owing to the ulcerating areas, and the bladder irritability is independent of violent exercise. The stream of urine is often suddenly arrested, but this is due to the voluntary action of the patient owing to the pain, and not to the corkage of the urethral orifice with a stone (Hurry Fenwick). The frequency and urging to micturate is present at night as well as during the day, a point of importance in distinguishing the malady from stone.

The use of the cystoscope will probably clear up any doubt, but it is not advisable to use this instrument in a tuberculous case, unless one is fairly skilful in its use. In my earlier experience of cystoscopy, I examined one such case, and the worrying of the bladder did harm, bringing on a very severe attack of bleeding, and I mention this as a warning to others, and should advise a beginner to gain his experience by examining cases in which there is no question of tubercle.

The only method of treatment which has any claim to success in this disease is founded upon the principle of local measures combined with complete rest of the organ concerned. A suprapubic drainage for several weeks or even months, combined with a thorough curettage of the base of the ulcers at the time of opening the bladder, has succeeded in a few cases. I have myself twice curetted a tuberculous ulcer in the bladder, but with only temporary benefit; but I think that the improvement might have been greater had I drained for a longer period.

As regards tuberculinum, useful as I have found it in scrofulous diseases elsewhere, I cannot say I have seen any good come of its administration in tuberculous disease of the bladder. Of other internal remedies, mercurius usually gives most relief to the constant and irritating desire to urinate.

PROSTATIC TROUBLES.

It has almost become an axiom in medicine that, given a large number of vaunted remedies and cures for any disease, the greater likelihood is it that the same is in-

curable; and if this be a true saying, one would be quite justified in classing as incurable senile hypertrophy of the prostate gland.

It is not my purpose to discuss, this evening, the merits of the various forms of operative treatment of this disease, but I wish to bring before your notice a method of treatment which, to a large number of practitioners, is practically unknown, and yet which may yet become one of the most popular operative measures; I refer to Bottini's method of cauterisation, or, to be more accurate, Freudenberg's modification of the same.

This operation was first suggested by Bottini, of Pavia. He used a metal instrument with a beak, in which was a sliding piece of platinum, which could be made hot by the electric current. The instrument was passed through the urethra into the bladder, and the beak made to hook over the enlarged and obstructing prostatic lobe, which was then seared by the heated platinum point. The after-contraction of the cauterised surface reduced the bulk of the gland, and at times removed the obstruction. Bottini reported fifty-seven cases with two deaths. In thirty-two cases a perfect cure resulted; in eleven an improvement was noted; and in twelve the result was *nil*.

Freudenberg's instrument is a great improvement upon Bottini's. It much resembles an ordinary lithotrite, the sliding male beak of which is the cauterising portion, and is made of platinum. Running through the entire length of the instrument, to the end of the female blade and back again, is a channel for the passage of ice water, which prevents unnecessary burning of the tissues. The electricity may be obtained from a suitable battery, and the strength must be carefully regulated by a rheostat.

The main advantage of this operation is that a general anæsthetic is not necessary. Cocaine or eucaïne is sufficient to dull sensation and to admit of the operation being performed practically painlessly.

The bladder should be well filled with some fluid, and, the cocaine having been injected into the posterior urethra, after an interval of a few minutes the operation is begun.

The instrument is inserted into the bladder, and its beak hooked over the inferior rim of the prostate, where it is firmly held, and as soon as the ice water flows freely, the previously-determined amount of electricity is turned on. To make sure that the platinum knife is sufficiently heated, one should wait ten to fifteen seconds; then the screw at the end of the handle is slowly turned, dragging the heated blade slowly through the floor of the prostate. The length of the incision, previously determined by rectal and urethral examination, is regulated by a scale inscribed on the shaft of the screw. If, in burning through the gland, too little resistance is encountered, one may surmise too great a heat in the cautery, and *vice versa*.

It is advisable to make three incisions at one sitting—one through the floor—the most important—and one through each lateral lobe. There is usually but little after-pain, although burning is experienced in passing urine. Bleeding is slight. The bladder should be irrigated only to assist in removing sloughs. Recovery may be rapid, but in debilitated subjects three to six weeks is taken in convalescence, and during this period some incontinence of urine is often noticed. Epididymitis sometimes occurs in the second week of convalescence.

The operation has, in all, been performed about 200 times by some twelve surgeons, and the opinion they have formed is very favourable. The direct mortality has been in the neighbourhood of 5 per cent., a very low figure when we consider that patients suffering from this disease are not usually the best class for operative interference. The number of cures and marked improvements are said to have been greater than under other procedures.

For a great part of the above information I am indebted to Dr. Bukk Carleton, the genito-urinary surgeon to the Hahnemann Hospital in New York, with whom I have been in communication, and who has performed the operation several times. From his experience and investigation of the subject, he is of opinion that the treatment will be the one of choice for prostate hypertrophy when the fibrous elements predominate; and it will give the best results when reten-

tion of urine of prostatic origin has not been complicated with cystitis. It has the advantage of leaving the anatomical parts intact, and does not destroy the tissues and organs which at certain periods of life are seemingly of great importance; but it renders a permanent mechanical division of the obstruction with rapid relief, a cure in many cases, and with exceedingly low death-rate.

The above is Dr. Carleton's summary of the position, and coming, as it does, from such a careful observer and skilled surgeon, it speaks well for the future of the operation.

NEW GROWTHS OF THE BLADDER.

The treatment of growths of the bladder cannot be said to have undergone any marked change within the past few years. In the case of benign neoplasms, the earlier removal is undertaken the better for the patient, for when once cystitis complicates the condition, removal is not attended with the same success as an operation performed at an earlier period. It may be many years before the cystitis appears, but once it has come, it usually remains, and adds considerably to the patient's sufferings. Patients in whom there is a suspicion of a vesical tumour, whether benign or malignant, should be very carefully handled for fear of setting up cystitis, and rigid asepticity of all instruments used should be observed. The presence of cystitis complicates any operative procedure by delaying healing both of the external wound and also of the sore left by removal of the tumour, and the hyperæmia always present as the result of the cystitis favours an early recurrence of the growth. Apart from this, the inflammation is particularly liable to spread up the ureters to the pelvis of the kidney, and set up a low form of pyelitis which may hasten the patient's end.

The removal of an epithelioma of the bladder may be undertaken with a fair prospect, if not of actual cure, at any rate of prolonging the patient's life, provided cystitis be not present and the muscle wall of the bladder has not become extensively infiltrated; that is to say, so long as the growth is largely limited to the mucous membrane of the bladder.

This point can be ascertained by rectal examination, the induration at the site of the disease being thus felt.

Bleeding being a symptom of so many urinary diseases, and a suspicion of malignant disease being so often present in our minds, cystoscopy is a valuable aid to us in such circumstances. As an example, I would quote a case which my colleague, Dr. Burford, was good enough to ask me to examine with him. An elderly lady complained of hæmaturia, which was evidently of vesical origin, but the nature of the disease was in question until the cystoscope showed a finger-like papilloma, situated close to the right ureter. Along one face of the growth ran a prominent vessel, which in all probability had been the source of the hæmorrhage. The rest of the bladder-wall was perfectly healthy, thus was all fear of malignant disease dispelled.

Another case of a lady sent to me by Dr. Herbert Wilde is interesting in this connection. She had cystitis, and had passed shreds of matter which on microscopical examination proved to contain vegetable fibrous tissue. This at once gave rise to a suspicion of a connection between the bladder and bowel.

Cystoscopic examination showed the correctness of this view. On the left side a fungating mass, evidently malignant, a little above the ureter was plainly visible, from the crater-like centre of which an air bubble or two occasionally came away, this being the point where bowel and bladder communicated.

It is not uncommon for shreds of tumour tissue to be passed per urethram in growths of the bladder; such a symptom clears up the diagnosis only to the extent of confirming the presence of a growth, but by no means gives an exact indication of the nature of the tumour, for a large number of vesical carcinomata have a covering of villous processes, and it is portions of these which are usually extruded, and microscopically they show no sign of malignancy.

An important question has often to be decided in the case of malignant growths which have passed the stage of radical operation and which are producing free and debilitating

hæmorrhage, viz., whether it is wise to perform drainage in order to check the loss of blood. Where cystitis is present and pain and irritability of the bladder an accompanying symptom, there can be no question as to the propriety of such a step; but when hæmorrhage is the only symptom with which we have to deal, the case is different, and under such circumstances Hurry Fenwick, whose experience in such cases is very large, considers that no such operation should be performed, and for the following reasons:—

First: Because it will induce cystitis.

Secondly: Because it will arrest the bleeding permanently; a point which he considers as disadvantageous to the patient, believing, as he does, that bleeding is favourable to a carcinomatous patient by relieving pain and allowing him to ebb easily out of life.

Thirdly: It will weaken the bladder at the site of the operative wound, and the scar, whether suprapubic or perineal, will subsequently become implicated. An untimely drainage thereby only adds a noisome and painful surface to sufficiently fetid and agonising disease.

Instead of operation, he advises the passage of a soft Jacques catheter and the slow withdrawal of the urine for three or four days until the hæmorrhage has diminished in violence. The hæmorrhage usually subsides upon the onset of the stage of cystitis, a stage, it may be added, which is nearly always reached, sooner or later, by these patients.

DISEASES OF THE SEMINAL VESICLES.

Though small organs, the seminal vesicles are capable of giving as much trouble as the prostate or epididymis. They, like all other saccular glands in the body, are liable to form cysts from obstruction to the exit of their fluid contents.

It is only of recent years that seminal vesiculitis has become recognised as a distinct disease, separate from prostatitis. This, like all other inflammatory affections, may be acute or chronic. The acute condition is usually mistaken for acute prostatitis. The chronic form of the disease excites symptoms which are often erroneously attributed to

chronic urethritis or cystitis, but which are not, as a rule, relieved by treatment ordinarily successful in such conditions.

The chronic form of the disease may be the outcome of an acute attack produced by gonorrhœal infection of the membrano-prostatic portion of the urethra, but it is more commonly brought about by excessive or unnatural sexual acts. The congestion of the parts evoked by such is sufficient to establish a permanent morbid state, resulting in increased secretion of the vesicular glands and thickening of the coats of the organ.

At times the ducts leading from the vesicles to the urethra become narrowed, and retention of the products of secretion leads to distension of the vesicles and their ampullæ, a condition which can be easily felt by examination per rectum.

The contents of the vesicles, according to the severity of the inflammation, may consist of mucus, pus, or blood. Usually, amylaceous bodies of a highly refractive nature, and resembling starch granules, are present. These are called symplexions, and may, together with adherent mucus and epithelial *débris*, form shreds or casts of the ejaculatory ducts, which, in time, get passed on into the urethra. The symplexions can generally be found in the sticky mucous discharge which appears at the meatus after the passage of a stool through the rectum has pressed upon and emptied the contents of the vesicles into the urethra.

If an acute attack of inflammation be grafted upon the chronic condition, an abscess may form, which, if not relieved by treatment, will point into the rectum or burrow in the pelvic cellular tissue, and cause much trouble.

The symptoms of this complaint are both local and general. The local ones are usually marked, and sufficient in most cases to excite a suspicion of their origin, which local examination will confirm.

Pain is frequent, and may be in any part of the genital area. By this is meant that area comprising the suprapubic, gluteal, lumbar, perineal, and scrotal regions; parts supplied by various branches of the sacral plexus, which, by reason

of its intimate connection with the hypogastric plexus, forms a ready route for the referred pains so common in diseases about the neck of the bladder.

The suprapubic pain is, perhaps, the most common. It may be unilateral, and on the side of the vesicle most diseased. It is often of a burning character, made worse by sexual acts. Sometimes the pain is excessively acute, occurring in crises. In such cases I have satisfied myself that these crises are contemporaneous with the passage of casts of the vesicles or ejaculatory ducts into the urethra, and are thus similar to renal or biliary colic. One of my patients would have two or more of such attacks each week, lasting about three hours. During this time he was in real agony, and on more than one occasion faintness was produced. Within a short time of this attack a round cord-like substance, of about the thickness of a crow quill, and varying in length from $\frac{1}{4}$ to $1\frac{3}{4}$ inches, would be passed per urethram. These masses were often curiously twisted or S-shaped, appearing as though they had rested in one of the ampullæ of the vesicle.

Accompanying the pain is usually much tenderness of the perinæum. The patient likes to sit on something hard, so that the whole of the body-weight is borne upon the tuberosities of the ischium. Occasionally, sciatic pain is present.

A mucous or semi-purulent discharge is common. It appears especially frequently in the morning, causing agglutination of the meatus. This discharge contains symplexions, and is much aggravated by sexual acts or lascivious thoughts. It is probably derived from the vesicles and their ducts, as it can be expressed from them by pressure in the rectum, and it frequently appears after going to stool. A similar symptom may be present in simple chronic prostatitis, unaccompanied by seminal vesiculitis, so that this is not pathognomonic of the disease. Occasionally, the discharge is dark coloured, owing to the presence of hæmoglobin, the congested state of the vesicles conducing to rupture of the blood-vessels.

Micturition is usually painful, the pain being felt at the

neck of the bladder and around the glans penis. Increased frequency of micturition is nearly always constant. In one of my cases it occurred every half-hour during the day, and was slightly less frequent during the night. In this case the right vesicle was the seat of the trouble, and could be felt as a round body about the thickness of a lead-pencil by rectal examination. The urine commonly contains phosphates, and this is an important point, as it is essential that the phosphaturia be corrected, otherwise complete cure is difficult.

The urine may be albuminous, owing to the regurgitation of semen into the bladder. This is diagnosed by the presence of spermatozoa in the urine, and together with these, pus cells and symplexions are commonly associated.

Sexual desire is usually increased in the early stages of the disease. This is only to be expected when the irritable condition of the parts is borne in mind. If this desire is given way to, the disease is aggravated. Later on, impotence may take its place. Nocturnal emissions are particularly frequent, and in severe cases the emissions may occur during the day time on the slightest provocation. One patient sent to me by Dr. Neild, who had previously diagnosed the disease, stated that, whenever he sat still for a long time, great pelvic discomfort ensued, and culminated in an emission, which gave some relief.

Mental symptoms are frequent, and often out of proportion to the local trouble—lassitude, weakness of memory, and depression of spirits, which may be so profound as to constitute a true melancholia. Sleep is disturbed, and headaches, especially in the occipital region, are commonly complained of.

The local condition is revealed by rectal digital examination. This may show that there is some slight enlargement of the prostate, though often this is not found. Passing the finger higher up and to one side of the middle line, the lower part of the seminal vesicle will be reached. If this is swollen, either from accumulated contents or from perivesicular infiltration, a long rounded mass will be felt, which is usually tender, and, at times, excessively so. Pressure

upon this and slight downward massage may empty its contents into the urethra. If the vesicle be much distended, its outline will be pear-shaped. The tenderness is nearly always limited to the immediate region of the organs concerned. There should be no difficulty in the diagnosis between a swollen seminal vesicle and a tuberculous nodule in the prostate. The former is higher up, and its shape is characteristic. It is not possible, as a rule, to reach the upper limit of the swelling, but it is altogether separate from the prostate. At times the outline of the vesicles is not easily made out, but there will be marked tenderness along their course.

Treatment of the complaint has to be carefully and regularly carried out, if we are to hope for a cure. Local treatment by massage is one of our greatest aids. Its aim is to empty the distended pouches of their accumulated secretion and to get rid of the surrounding induration, which is one of the chief impediments to their efficient evacuation.

To perform massage satisfactorily, the patient should have a full bladder, and be made to stand with the body bent at right angles over a support, or he may be in the knee-elbow position. The left fist should then be pressed over the pubes, so as to press the bladder towards the rectum, and the index finger of the right hand, previously covered with an india-rubber finger-stall, so as to prevent any injury to the rectal mucosa, should be introduced into the rectum as high as possible, so as to reach the upper part of the vesicle. Whilst counter-pressure is now exerted above the pubes, the right index finger should gently stroke the vesicle downwards, so as to empty its contents into the urethra. This should be repeated several times, and the patient should then pass water, so as to wash out all that has been emptied into the urethra.

The first time that this so-called "stripping" of the vesicles is performed, many strings of symplexions will appear in the urine so voided, but as the disease improves, less and less will appear.

This massage must not be repeated oftener than once a

week, and if it appears to aggravate the pain, or if pus appears when the vesicles are emptied, it should be stopped until a more favourable occasion. I am bound to say that though I have found this massage extremely useful in some cases, others, in which opportunity for carrying out a proper course of it has been lacking, have recovered without its employment. Hot rectal douches are of great value. They may be given with a syringe, or a so-called "rectal psychrophore" can be used.

A suppository containing gr. v. of ichthyol placed into the rectum every night leads to a rapid improvement, but it occasionally cannot be borne owing to the irritability of the rectal mucous membrane. In such a hazeline suppository may be better.

In very chronic cases of vesiculitis, galvanism by means of a rectal electrode may be tried if all other means fail. This needs rather special instruments, and as I have never myself used it I cannot speak from personal knowledge of its beneficial effects.

It is as well in all cases to advise the use of a suspensory apparatus for the testicles; this prevents dragging on the cord, and thus a certain amount of tension on the intra-pelvic connections of the same is saved.

Internal treatment is of the greatest importance. Of remedies, I have found most benefit come in the earlier stages from the use of oxalic acid or acid phosph.

The former is most suited to those cases in which great languor and lassitude are present. There is increased frequency of micturition, with some pain and burning. The testicles are often tender. Considerable sexual excitement. Oxalates or uric acid are present in the urine. The latter has much the same symptoms, but phosphates in the urine are its main indication. It is especially useful after sexual excess. Acid. picricum, so useful in prostatic cases, I have not found of much benefit. Hepar sulph. is sometimes indicated where emissions are very frequent. Ammon. brom. is, perhaps, the most suitable remedy where there is much mental distress. Each case will probably need many changes in the remedy before a cure is complete, and in no case is

there likely to be a rapid improvement, and everything must be done that is possible to keep up the patient's spirits. Bicycling should be forbidden, though it is but rarely that a patient has any inclination to attempt it, as the seat nearly always causes discomfort. Coffee and all rich and spiced food must likewise be avoided, and alcohol also is usually contraindicated.

Should an abscess form in the vesicle, it should, of course, be opened. Some advise that this should be done through the rectum, but apart from the chances of hæmorrhage from enlarged rectal veins, the probability of septic material entering the abscess cavity from the rectum is sufficient to contraindicate this operation, and a safer way would be to dissect down to the spot through the perinæum. By this same route, the diseased vesicle in certain cases has been successfully removed.

GONORRHOËAL SEPTICÆMIA.

There are few of us who have not had to deal at some time or other with cases of synovitis, following an attack of gonorrhœa.

This so-called "gonorrhœal rheumatism" is considered, and probably rightly so, to be a true form of pyæmia. It seems to attack both large and small joints indiscriminately. I have myself seen the knee-joint, shoulder, tarsal, metacarpal, and joints of the vertebræ involved, though, excepting those in which vertebral synovitis occurred, I cannot remember more than one case in which two joints were simultaneously attacked.

The joints become much swollen; pain is usually present, though not very acute, and pus may form within them, though it is more common to find the swelling due to a circumarticular and intraligamentous fibrinous deposit. On one occasion, in a patient in this hospital, under Dr. Moir, the knee-joint was opened, and though the swelling was considerable, leading one to expect the presence of a good deal of fluid, only a very small quantity escaped. The ultimate result in this case was very good.

This complication of gonorrhœa is usually a very troublesome one, and fibrous ankylosis is apt to supervene. The treatment that I have found most useful is to paint on glycerine and belladonna and constantly foment, and at the same time to administer merc. binioid. internally.

After the subsidence of the acute inflammatory symptoms, I have found that massage, combined with the Dowsing heat applications, has acted very beneficially. The last case of this nature that I had to deal with—it was one of tarsal synovitis—was completely cured by these means in a shorter time than I had previously experienced under other kinds of treatment, and I can recommend this plan to those of you who have not yet tried it. It is, of course, necessary to pay attention to the gonorrhœal discharge, if any be present, though I have known cases to occur with practically no urethral running present at the time.

The important rôle which the gonococcus plays in the causation of disease is becoming daily more clearly recognised. Not only is it the cause of a specific urethritis and of many of its complications, such as prostatitis, epididymitis, inflammatory processes of the uterus and Fallopian tubes and peritoneum; but it may give rise to septicæmia, to serious organic heart lesions, such as endocarditis, pericarditis, and myocarditis. It has further been recently shown that gonorrhœal arthritis may be secondary to ophthalmia neonatorum. It would appear, therefore, that the gonorrhœal poison is scarcely less protean in its manifestations than that of syphilis.

In concluding this very imperfect production, I can assure you that none is so fully aware of its defects as myself. It has fallen far short of the ideal I had in my mind when I commenced it, and I can only hope that a series of brilliant and interesting papers and discussions will follow during this session, which will go somewhat towards making up for the shortcomings of this address.

EXTRACTS FROM AN OFFICIAL REPORT OF
THE PLAGUE BY MAJOR DEANE, R.A.M.C.

PRESENTED, WITH REMARKS, BY D. DYCE BROWN, M.A., M.D.

Consulting Physician to the London Homœopathic Hospital.

MR. PRESIDENT AND GENTLEMEN, — Major Deane's Report on Plague in Calcutta is from July, 1899, to July, 1900. It was presented to the municipality of Calcutta. It requires no apology from me that I have the pleasure of acting as sponsor to our colleague, Major Deane, as, from his duties in India, he is unable to be present. As we, therefore, cannot hear his own words and see him with us, it gives me the greatest pleasure to give you, with his sanction, a *résumé* of his investigations and conclusions. Nor does it require any apology on his part or on mine for bringing up again before the Society the subject of Plague, since we have the disease in this country, though only to a slight extent. But being so, it behoves us to understand the plague in all its bearings. In his former communication, Major Deane—and, through him, Dr. Byres Moir—dealt with the nature of the disease, its symptoms, and its treatment—a treatment on which he has thrown an entirely new light, showing the great value of homœopathic therapeutics. In the present report the subject is dealt with from another point of view; in fact, he says nothing of treatment or the symptoms of the disease. The chief points he takes up are:—

- (1) The contagiousness or infectiousness of plague.
- (2) The value of removal of patients to hospital.
- (3) The value of segregation of "contacts," by which he means those coming into close contact with the patients.
- (4) The value of disinfection.
- (5) The question of rat infection.

In discussing these questions Dr. Deane displays a remarkable judicial and philosophical power in putting

aside all prejudices and preconceived theories, which, he says, may be true or may not, and trusting to close and careful observation, on which alone he bases his conclusions—the only true scientific method.

Two other reports on previous epidemics are given by other Army surgeons, and the whole is drawn up in a report by Mr. Bright, the chairman of the Calcutta Municipal Corporation. In this report Mr. Bright shows the greatest confidence in Major Deane and his conclusions. Major Deane was appointed special medical officer for Calcutta from July, 1899, to July, 1900, and thus had the entire control of all the investigations conducted by his numerous assistants, medical and other.

Before Major Deane's appointment, the Government had, as we know, carried out, or tried to do so, a system of compulsory conveyance to hospital of plague cases. This was soon found to be mistaken policy. It was particularly unworkable, and medically of no value, while practically, as we know, it was disastrous. The Government then changed its plan; no case was taken compulsorily to the hospital. Patients and their friends were offered hospital accommodation if they wished it; but, if not, they were treated at their own homes. The segregation of contacts in camps or elsewhere was abandoned, and the only thing which was insisted on was disinfection of the rooms where a patient was or had been, and, if possible, the whole house. But immediately after the disinfection the people were allowed to return—within a few hours sometimes—and even to the room in which a plague case had been or had died.

The disinfection was invariably carried out by staining the walls and floors with a solution of perchloride of mercury (1 in 1,000). Articles of clothing or of bedding, which were of little value, were burnt, and compensation paid for all such destruction. More valuable articles were simply disinfected by steam.

Under the heading of "Spread of Plague, and How to Deal with It," come Major Deane's views of the contagiousness or infectiousness of plague. This part is so important, and his opinion that plague has a very low

amount of contagion differing from the general or popular idea, that I must make a long quotation :—

“ SPREAD OF PLAGUE, AND HOW TO DEAL WITH IT.

“ Before trying to form any conclusions as to the means by which plague is, or may be, disseminated, it is essential that some facts connected with infectious diseases generally should be clearly borne in mind. There are facts which are liable to be forgotten—and, indeed, have been forgotten—in the hankering after a certainty as regards plague, which has only been attained after many years of expert observation under more favourable conditions than are possible in an Eastern country, in a very small number of the diseases which may be called infectious.

“ Though, for ordinary purposes, the term infection may be taken to include contagion, in considering plague the technical demarcation between the two must be observed. An important question of preventive treatment is concerned with the distinction—a forgetfulness of which has been fraught in this country with far-reaching disastrous consequences.

“ Contagion, in its limited sense, means the direct transmission of the disease from one affected to a healthy person, and in no other way can the latter contract the disease. This contagion may take place in two ways: first, by inoculation, as in the venereal diseases; secondly, by the close proximity of a healthy to a diseased person. For instance, a child enters the room in which a patient is sick with measles or scarlet fever, and develops the disease after the usual period. The disease is contracted by direct contact with the patient, or the air immediately surrounding him.

“ Infection means indirect contact with the poison, through some medium other than the diseased human body; it may be the air, food, water, clothes, dust, or anything. There are certain contagious diseases which are not infectious; *e.g.*, the venereal diseases. The poison has no existence apart from the human body, and can only gain access to a healthy person by direct inoculation from one so diseased.

“ Theoretically, these directly contagious, non-infectious, are the most easily preventable of all diseases, but, practically, we know otherwise.

“ The diseased cannot be kept apart from the healthy, which is the desideratum.

“ Now, all infectious diseases are not directly contagious, as

examples of which typhoid fever and cholera may be cited. An example of mixed contagious and infectious properties exists in anthrax, which is directly communicated from diseased animals to man, but not directly so, as a rule, from one animal to another. One animal deposits the poison on a field when feeding, and other animals contract the disease indirectly in that way.

"These examples show that the poisons causing the various diseases have, and maintain, an independent existence outside the human body.

"The actual *materies morbi* has been identified as the presumable specific cause for a few of the infectious diseases, and the medium through which it may affect the human body partly ascertained for certain of the affections; e.g., typhoid fever and cholera through water, tubercle through milk and food, lock-jaw through the soil, the latter disease being non-contagious, and the micro-organism producing it ubiquitous.

"The specific organism for the majority of the infectious fevers has not been discovered, but practical observation shows that they are both contagious and infectious, the latter property necessitating an independent vitality of the *materies morbi* outside the bodies of those suffering from the particular disease. Such a *materies morbi* will remain latent, or become virulent, under circumstances yet to be discovered, and become diffused over more or less extended areas by means which defy elucidation.

"I said just now that the purely contagious diseases were, theoretically, the most easily prevented, by separating the sick from the healthy, and that is, because the origin of the disease has no existence in nature outside the human body. We are justified in saying it has no existence, as otherwise it would give evidence of such, even though it might not (as most do not) subject itself to ocular examination.

"Where practicable, isolation of a person suffering from a purely contagious disease will assuredly stop the disease spreading from that person. Now in direct proportion as infectious properties overlap the contagious, so does the value of isolation and segregation become less, until in some of the infectious diseases, as typhoid fever, cholera, and tuberculosis, where contagion is a negligible quantity, isolation and segregation are useless. The indication is in such cases to prevent further diffusion of the poison into any surrounding media through the discharges by disinfection. In some diseases the channels through which infective material leaves the body are known, and all that can be done is to destroy the poison as far as possible, while the patient is under treatment, by dealing with various excreta.

“There are certain of the infectious fevers which are at the same time markedly contagious; *e.g.*, measles, scarlet fever, small-pox, whooping-cough, and diphtheria. In such diseases isolation is practised as far as possible, and may prevent other members of a family, or near neighbours, contracting the disease. In my own experience, from which I can speak, in the diseases mentioned infection, however, far outweighs contagion, and indicates again destruction of the poison, if possible, *in loco*. Unfortunately, such destruction to a complete extent is not always practicable, even when we know the lines along which to work. In some infectious fevers we have evidence of the poison being conveyed by clothes, articles of furniture, such as curtains, &c., and the difficulty of an ideal disinfection is obvious.

“This leads one to another point. In contagio-infectious diseases it is impossible, with rare exceptions, to trace the source of infection in any particular case; and I might say that when an epidemic is established it is absolutely impossible to do anything more than indulge in speculations.

“In an European community there is no difficulty in carrying out a more or less complete isolation of the sick in those infectious fevers mentioned, which have a considerable element of contagion in their propagation. Public opinion would to a great extent insist on such being carried out owing to a dread of the infant mortality produced by those diseases, and, though an epidemic of measles or scarlet fever cannot be stopped by isolating individual patients, a local spread of the disease may be prevented, and public opinion is satisfied.

“It is very important to gain some fairly definite idea as to which category plague should be relegated—purely contagious, or contagio-infectious? If the latter, whether the infection equals, is less, or greater than the direct contagion, because the less the direct contagion and the greater the indirect, the less useful are any measures of isolation and segregation likely to be, even if thoroughly carried out.

“The class in which this disease is to be placed can only be determined by practical observation of it in nature.

“A micro-organism has been discovered in plague patients which is more or less reasonably looked on as the specific cause.

“The same organism has not yet been discovered outside the human body, or the bodies of animals affected with plague, so whether it exists in the same form in nature or undergoes evolution from some other in the body, are matters to be determined. Speculations as to whether it is a spore-bearing organism

or not are of no practical use in attempting to deal with the prevention of the disease. Our only guide at present is the one common to those of the other infectious fevers, for which no micro-organism has yet been identified, either in the body or out of it—practical observation. Observation plainly shows it to have an exanthropic existence. Laboratory experiments with the organism, as is known, tend to show certain more or less uniform properties. But all such experiments under artificial conditions are but, at the best, unreliable guides as to what happens under natural conditions.

“We can only judge of the most probable conditions by observing the effects as presented to us by nature. In this way we may deduce a course of action. We are not debarred from action because we cannot trace the ultimate cause. Were it so, we might forego the practice of medicine altogether. Many conditions come before us every day in practice the causes of which are mere guesses, but nature points the way to dealing with them.

“We need be no more ashamed of our ignorance about plague than about scarlet fever or small-pox and vaccination. The prophylaxis of one against the other in the latter instance is an observed fact of nature, but we know nothing as to the explanation; and, after all, observing nature's facts is the highest form of science.

“To mention a few results of the laboratory experiments:—

“The plague bacillus is short-lived in a test-tube, and readily devitalises in sunlight; it is readily destroyed by antiseptics; it will live only a few days when artificially introduced into grain; it cannot be cultivated under the circumstances of putrefaction. The explanation given of its non-discovery in an exanthropic form is that other bacilli grow more rapidly and prevent the culture of the plague bacillus. Perhaps. Some of the experimental bacteriological results seem at variance with practical experience, and none of them are of any use in dealing with the disease. Indeed, it is of more importance to study the conditions appertaining to man, who is the sufferer from the disease, under which it prevails. Such study will lead to an abatement of the conditions favouring the growth of the disease, but the specific cause will remain, though inoperative.

“It cannot be supposed that the cause of typhus fever has been killed in England. The microbe—if one at all—is there, but it cannot, or does not, develop under the altered conditions; and the nature of the specific cause is a question subordinate to measures of improved dwellings, decrease of overcrowding, supply of fresh air, and access of sunshine.

“There is abundance of evidence to show that under conditions of light and air plague has a very low contagious power; indeed, so low is it that it may practically be ignored. Experience at all hospitals and plague camps is unanimous on the point, and details need not be given here.

“It is more difficult to determine to what extent the disease is transmitted from the sick to the healthy under the conditions obtaining in the people’s own quarters—conditions which are often a mixture of darkness, stagnant air, filth, and over-crowding; but I think something can be learnt from the experience here; at all events, sufficient to give a hint as to how to deal with the disease.

“Specific diseases, according to most recent knowledge, will not arise *de novo*, even under insanitation; though not so many years ago the opposite view was held. Insanitary conditions, as we understand them, are not even necessary to the prevalence of an infectious disease. Witness only typhoid fever among British troops in modern barracks and in cantonments generally, and influenza in all classes of society, from the garret to the palace.

“As the most insanitary quarters are the most overcrowded as a rule, it is a point to decide whether the latter or former element stands in the greater causative relation to the spread of the disease.

“I must now invite attention to a point in the general construction of the city. The Marwari and the surrounding quarter, known generally as Burra Bazaar, consist of large high houses on either side of narrow streets, with *bustees* interspersed. Many of the houses are partly residential and partly warehouses for piece-goods and other merchandise. Other parts of the city consist mostly of *bustees* with houses interspersed, and a great part consists entirely of *bustees*, some two-storied, but mostly one-storied. In many *bustees* there are open spaces of greater or less size, and tanks with space around them. The individual huts composing a *bustee* are irregularly distributed; some of them standing alone, and others massed in clusters, with narrow *gullies* separating portions of them. In the *bustees* there is the same general construction as obtains in large houses—an arrangement of rooms round a court-yard. There is often an overhanging verandah in front of the rooms, which latter, in such cases, are frequently dark.”

He then gives details, which I omit, and he goes on to say :—

“Allowing that there were some cases of plague undetected, even so, it shows a remarkable incidence of single cases in huts and houses. The number of contacts, direct or indirect, with the person suffering from plague is impossible to estimate. It may be anything from one to a hundred, or more. There is no attempt at the impracticable task of isolating a patient. The fact is observed that relatives, friends, and neighbours in the hut with a plague patient do not contract the disease to any extent.

“As I have said elsewhere in this report, I cannot compare plague incidence with population, with even an approach to accuracy. It is evident that the contagious properties of the disease are very low indeed.

“The above facts not only point to the low contagious properties, but seemingly also to the low infectious qualities. Though it is impossible to gauge the extent to which neighbours may visit the sick, or the extent to which those actually sharing the patient's rooms may come into close contact with others, it is certain that the residents of the sick room must move about amongst other people in the immediate neighbourhood. The small extent to which people thus coming into contact with those in immediate relationship with the sick contract the disease tends to show that indirect contagion through the healthy does not hold a high place in causing the spread of the disease. In cases where plague occurs in different parts of a large *bustee*, it is impossible to determine whether the infection was carried there from a patient in another part of the same *bustee*. The facts, so far as they can be observed, seem to negative such a view.

“That the disease can be contracted from a person sick with it may or may not be doubted, but at the same time it is very difficult to give instances of it and to exclude sources of infection. Many instances could be given which, from a limited point of view, might be taken to illustrate direct contagion from the sick, but which, from a wider point of view, clearly admit the likelihood of a common source of infection for the two or more cases. I will mention a few instances which point more decidedly to direct contagion than any other source, but I do not speak definitely on the subject; as it will be seen, there is a possibility of common infection. I am unable to furnish stronger instances than these in favour of direct contagion.”

After giving further cases, he adds:—

“The greatest probability is that a common source of infection was acting in all the cases.”

Major Deane then continues :—

“ Whether plague be contagious, so far as it is so at all, through recent discharges—pulmonary, intestinal, &c.—is undecided. With the exception of pneumonic cases—of which, however, I have no evidence bearing on the point to offer as regards Calcutta—the disease is not contagious apparently through the discharges. The remarkably small incidence of cases in *bustees*, as compared with the number of people, is noticed too in *pucca* houses. There are many more *bustees* than houses in Calcutta, so naturally the former return more plague.

“ Allowing that there may be a margin of unavoidable error in these figures, they are sufficient to show that the spread of the disease in Calcutta to contacts—*i.e.*, people inhabiting the same house, visitors to the sick, or even inhabitants of the same room—is so slight that it may practically be ignored ; and it decidedly shows that there are no medical grounds for attempting to force on the people a measure of isolation and segregation. Of course, individual houses could be selected showing more cases than others, but with no practical advantage.

“ There is one point which must be mentioned in the spread of plague here. There is no doubt that the single-storied *bustees* present less favourable conditions for the spread of the disease than any other class of structure, even though *bustees* have been chiefly affected, because there are more *bustees* than anything else. A larger proportion of cases occurs in two-storied huts.

“ This may naturally be accounted for by a larger population, but still the same low incidence of cases is noted.

“ We may dismiss direct personal contagion as being the chief means of spread. Whether the same thing applies to plague as to typhoid fever—that recent intestinal discharges are not infective, but become so on drying—is unknown. If the discharges were infective, either when recent or after drying, one would expect a greater incidence of cases among contacts, especially as no attempt is made by the people to observe the slightest care as to various discharges.

“ We are driven to infection as the chief mode of dissemination—and how is that carried? I can give no clear instance of carriage of infection by fomites in Calcutta, and it is impossible to judge of the extent to which such may be the case. As there is the probability of its being so carried, it is important to destroy or disinfect everything in the way of bedding and clothing used by a patient. As I have said when dealing with disinfection, this cannot always be done, as is desirable. The articles are

taken by *domes*, and perhaps sold by them in the bazaar, and all trace of them is lost. Efforts have been made to trace infection through clothes, but unsuccessfully. A history given one day has been contradicted the next by the same people. An effort was directed to trace connection between Burra Bazaar and the Dhobikhana at Woolfut Bagan Bustee, but nothing could be made of it. Instances given in this report will show the difficulty in tracing the source of infection in any case. It is no more disappointing than the fact that in diphtheria—a markedly contagious disease, which has increased largely the last thirty years in London—the source of infection can comparatively rarely be traced in individual cases.

“ Even where early cases of plague are discovered in a locality it does not necessarily mean that the introduction of the infection was connected with them. The infection may have been introduced some time before cases declared themselves, and this seems probable from what I have said before about infection seeming to take some time to acquire virulence in a locality. Further observations on that point are necessary, and will be prosecuted. Many possible methods by which the infection may be disseminated suggest themselves, but more prolonged study is required to define them. I am now prosecuting some experiments to find out if the bedding and clothes of plague patients are infective. Meantime, moreover, we can act on general knowledge, and exert every effort to combat sources within reach, such as bedding, clothing, &c. Measures on a large scale, designed to cancel predisposing causes—such as lessening of over-crowding, improvement of dwellings as regards light and ventilation—can only be gradual, as they have been elsewhere, and need not be further considered here. The fact that the disease has in a measure followed the main lines of human traffic seems to indicate that the infection is carried by human beings; but this, again, requires further study, as the supposition will not account for many occurrences. As I have said previously, other facts seem to indicate that the infection is not so carried.

“ There is one point which certainly strikes me, which, though only a possible one, is, I think, worthy of attention. The infection may be carried by dust, and to anyone going through parts of Calcutta early in the morning when sweepers are raising clouds of dust the thought occurs that it is a ready means of depositing infection in houses near at hand and also at a distance. It is an elementary principle of sanitation that no dry dusting should be permitted; but consider the difficulty of getting an English house-

maid to dust the house furniture with a wet cloth. Again, one must face the question of cosmic influences in determining the course of plague, like all epidemic diseases; and as regards that part of the subject, the wisest man at present is he who acknowledges boldly an agnostic position. Facts—observed facts of nature—are what we want, but how hard they are to read. We must disabuse our minds entirely of any theories when starting to investigate the subject. Enough facts have been observed in Calcutta to justify a course of action calculated to do no harm, and suggesting possibilities of immense good. One need not despair of light being thrown on the causation of plague when one remembers that the two greatest triumphs of preventive and therapeutic medicine were respectively proclaimed by men who, in the course of their work for daily bread, observed facts of nature's own, of which no explanation has been given, which many had seen before them, and had yet not discovered their significance. Untold millions had seen objects fall to the ground before Newton observed the apple. What is nature's fact about plague? Echo answers what?

“HOW TO DEAL WITH IT.

“It is well to realise what it is we have to deal with. We are face to face with a disease of which there have been a greater number of epidemics than of any other, and of an incomparably wider extent. It has devastated whole countries, changed the destinies of cities, and, after persisting in varying degrees of virulence for many years, has disappeared, perhaps to return later. It has run its course unchecked, and its amenability to treatment has consistently remained a minus quantity. Its method of entry into a country, supposing it to have been introduced, has never been discovered, nor the quarter whence it came. It is quite a matter of speculation whether an outbreak in one country involves the necessary introduction of infection from another. It is no stretch of the imagination to suppose the infection may be more or less ubiquitous, and subject to cycles of latency and virulence, under conditions which remain to be solved.

“The mystery attendant on the appearance and disappearance of plague is no greater than that of influenza.

“It is by no means essential, either to the prevention or treatment of a disease, that the *causa causans* should be known. Moreover, preventive measures were successfully adopted against widespread and fatal diseases long before the specific cause was

found, for example, consumption and cholera, allowing that the specific microbe has been found for the latter, which is uncertain. The ravages of consumption were being lessened, as the result of practical observation, long before Koch discovered the tubercle bacillus, and such discovery has not altered the line of direction which was being followed. Dr. Snow, in 1854, in London, long before Koch discovered the bacillus which, he said, was the cause of cholera, had brilliantly demonstrated the non-contagiousness of that disease, the means by which it was spread, and the method of preventing it, and the discovery of the comma bacillus has not enhanced the value nor modified the teaching of Snow's demonstration, which stands as a monument of observation.

"Other diseases for which no specific organism has ever been discovered have either almost disappeared or ceased to be objects of terror. Again, simply due to measures the result of practical observation, typhus fever and small-pox, for example.

"On the other hand, an extensive knowledge of an organism giving rise to a disease does not lead to diminished prevalence thereof. Witness diphtheria, which has been largely on the increase for some years and since the discovery of the specific bacillus. One more instance—typhoid fever. A bacillus has been identified as the presumable cause, though it is not always to be found, as in the late Maidstone famous epidemic. Of late years, at least in India, the disease has become more prevalent, and defied even sanitary suggestion.

"Other zymotic diseases, as scarlet fever, measles, and whooping-cough, for which no organism has been discovered, have lessened inappreciably of late years, though a certain amount of control can be obtained over them in limited areas as the result of observation. As I said before, a large element of direct contagion enters into their mode of spreading and lends itself to effective preventive measures.

"These remarks are not without their object, which is, first, to show that even if the exciting cause of plague were discovered, there are no hopes that the prevention of it would be furthered thereby; and secondly, that because it has not yet been discovered, we need sit with folded hands and await that consummation, however desirable it may be. We cannot study the conditions of the specific cause in a state of nature (supposing the bacillus, as known to exist in plague-stricken bodies, to be in its natural form), but we can observe and study the conditions under which human beings become susceptible to its influence. We have enough facts now at our command to recommend a reason-

able line of action and to render us independent of actions based on theories. Such observation and study of other infectious diseases with undiscovered specific causes, have led to untold blessings, and surely we may expect that the same will in time lead to some amelioration of the disease we are considering. We can hope to learn nothing of the subject, except by interrogating nature through our bodily senses ; and experience often teaches what reason cannot. As regards plague, like many other things, we have to realise that *causa latet, res est notissima*—the cause is hidden, the effect most plain.

“ I will now consider the result of observation, so far as it has gone in Calcutta, in its bearing on measures of prevention. In this connection there is no object in discussing measures which might be feasible in an European country, such as compulsory notification of diseases, which is enforced by Act of Parliament in England. Other measures, such as complete separation of the sick from the healthy, and means adapted for detecting the first case, can be carried out there which are impracticable in this country.

“ When a clear idea exists of what has to be dealt with, and what object has to be aimed at, the means at hand must then be adjusted and modified to suit the actual circumstances. What may be feasible at one time and in one place may be utterly impracticable at another time and under different circumstances. The greatest amount of good with the least amount of harm of any kind must be aimed at. The history of plague is not without instances of a theoretical amount of good with an immense amount of harm ensuing on attempts to deal with it.

“ In this country (and I am confining myself now strictly to India) we are defeated at the outset in attacking the disease, in that the first desideratum in dealing with an infectious disease, which also contains even a very slight, if any, element of contagion, cannot be fulfilled. The desideratum is to intercept the first case, find the source of infection, and cut off the supply. The source of the supply is unknown, and when the disease has been recognised, infection has been implanted over more or less wide areas ; and then it comes to a question of dealing with that infection, and isolating one individual case and segregating the contacts, even if feasible, will no longer meet the requirements. Such attempts have been made, and the results may be read in current literature. Improvement in those measures has been arrived at through their failures.

“ If we should be lucky enough ever to find the first case,

either in a town or a village, by all means isolate it completely and destroy every vestige of clothing, bedding, &c., and do the same to every person who was with the case. But, unless the first case is so intercepted, the circumstances become entirely altered. Here, in Calcutta, the disease was occurring in several quarters of the town, directly it became known to be an infected place. Experience shows it to be an infectious disease to a much greater degree than contagious; and the object, in such a state of general distribution, is to localise the cases. Once infection is known to exist in several localities, isolation of sick and segregation of contacts in a disease like plague among the population of this country is useless, and indeed is not practicable. Such measures cannot be, and have not been, carried out with any approach to completeness, and the attempt has been the means of raising the opposition of the people, and with no effect on the plague. Forcible measures necessary to combat opposition, which has arisen on the part of the people, do not offer much hope of success, at the same time, of repressing the plague. Unless measures directed against it have a tendency to carry the people with them, they are not likely to meet with a large measure of success. The greatest amount of opposition, passive and active, to plague measures has been caused by dread of removal to hospitals and segregation camps, which has also led to concealment of patients and surreptitious disposal of corpses and, moreover, to riots with loss of life. Experience here demonstrates the uselessness and mischief of attempting such measures.

“I have shown that such methods could not be expected to stop an epidemic of plague, and experience has abundantly proved it. I have described the methods of finding and dealing with such cases, and indeed the procedure obtaining here may well be taken as the best possible solution of the question of dealing with plague in a large city.

“Leave the cases where they are. If they want to go to hospital let them go. Discourage contacts to leave the house. Disinfect the room in which the case has occurred, and, if alive, as soon as practicable, and perhaps again after death. Experience here has demonstrated that evacuation of premises is unnecessary, and indeed calculated to do more harm than good.

“Burn every article of bedding, clothing, &c., that can be burned (the question of compensation is an administrative one), and disinfect those that it is not advisable to burn. Then it is advisable to disinfect the remainder of the house or hut, and also

the surrounding ones. At the commencement of an epidemic it remains to be seen whether extensive disinfections will not mitigate its severity. This, again, becomes an administrative question, and, however desirable it may be from a medical point of view, it may not be feasible from a political one. When the people agree to it, well and good; but when they decline, medicine must wait on policy to say whether it is to be carried out compulsorily or not.

"If possible, it would be advisable to carry out wholesale disinfections while sporadic cases only were occurring, rather than wait till the disease was becoming epidemic; and every effort will be made to see whether such measures will mitigate the severity of the next possible epidemic in Calcutta.

"The only compulsory measure in Calcutta is disinfection of a plague infected room, and no difficulty arose about it all last epidemic. Compensation for articles destroyed was freely given; the inconvenience entailed on the people was simply that of evacuating the room to permit of the disinfection, and the room was re-occupied the same day. If disinfection on a large scale were made compulsory, and the inhabitants were relieved of trouble and expense in clearing quarters and godowns, I am inclined to think we should have little, if any, more difficulty than is experienced now with the ordinary disinfections. But should such a course not be deemed feasible by the responsible authorities, then it is demonstrably clear the best procedure is that obtaining here, once plague has appeared in a city. It is not pretended that it can stop an epidemic when rising, and no measures have done so. And the only conceivable measures likely to do so are the disinfecting operations mentioned above. It is perfectly clear the procedure here does any good as regards plague that can be done at present, and, what is of great importance, does no harm.

"The sanitary measures which might, and probably would, prevent infection even gaining a hold at all are in the future, and they are of such a nature that generations are required for their accomplishment. Plague and typhus fever have been, it is fair to say, in a great measure driven from England by improved sanitary conditions, especially as regards dwellings and overcrowding; but consider the time occupied by those improvements, which are still daily going on. Improved dwellings and less overcrowding in this country will doubtless, in time, have the same effect, but at present we must deal with things as they are, and a further consideration of the possible in the future is beyond the scope of this report."

In another passage, p. 42, earlier in the volume, Major Deane says :—

“The remarkable coincidence in time of the recrudescence in the various wards shows an element in the disease, common to other epidemics, which is impossible to account for by direct transmission through human or animal agency. There is an element common to all infectious diseases more or less which determines the spread thereof; it may best be designated by X, the value of which is unknown, and equally so in plague. The one thing that does seem certain is that the value of X is much greater than that of any other element yet determined for various of the specific diseases.

“The cyclical latency and revival of virulence of epidemic diseases at more or less definite intervals are points in their history as yet mysteries, and explanations which one hears at times are on a par with the reason which might be given for the transparency of glass, namely, that you can see through it.”

While the removal to hospital of patients is now made quite a secondary matter, and left entirely to the wishes of the patient and his friends, Major Deane's views on the segregation of contacts are important and, as will be seen, it was not further attempted, and with excellent results. He says :—

“The room in which the death took place, and any other room occupied during the time of illness of the deceased, is cleared of its contents, and disinfected with an acid solution of perchloride of mercury 1 in 1,000.

“PROCEDURE WITH CONTACTS.

“This conveniently comes under the heading of ‘Disinfection.’

“No attempt is made at the impracticable task of segregation or isolation of any persons in a house in which plague has occurred. After assuming office I issued instructions that the people, so far from being encouraged or advised to evacuate the premises for any length of time whatever, were to be encouraged to reoccupy the disinfected rooms when they liked. The only recommendation to be made was for them to wait for the room to dry. Even the latter course is not always practicable. This point is really an important one. When a man has died of plague in a house or room, there is a chance that other inmates

have contracted the disease, but it is in an incubation stage at the time of disinfection, a stage which is not recognisable.

“If such people are turned out of the house, the disease develops after they have occupied quarters elsewhere, and they *may* infect a previously plague-free locality. On the other hand, if they remain in the original house, they are no worse off personally; there is a much greater chance of the case being found early; the disease has a chance of being localised as far as that house is concerned; and the procedure has the additional advantage of enabling us to keep touch with the extent of the disease.

“It will be seen later on that cases, except those in which the disease is incubating, do not recur in a disinfected room and the procedure adopted is incomparably superior to any attempts at evacuation of premises.

“On medical grounds, attempted evacuation of premises and segregation in a city like this are prejudicial to the objects in view, and on political grounds, the attempt has been disastrous, though that part of the subject is beyond my province.”

Next comes a point of great interest and importance, namely, *Disinfection* and its results. Major Deane says:—

“This process (disinfection) having been carried out in Calcutta without any evacuation of houses or segregation of inmates, a good opportunity offers of judging the efficacy of it. When several causes are concerned with one effect, it is open to anyone to pick out the element which most fits in with his ideas, and point to that as the only or chief one in producing the result. Obviously, he is as likely to be wrong as right. Indeed, unless the ideas referred to are founded on observed facts, he is more likely to be wrong than right.”

He then gives details of cases of disinfection with the perchloride of mercury (1 in 1,000), and after an illustration, he says:—

“The instances might be quoted to show the needlessness of disinfection, segregation, isolation, and evacuation, either singly or all together. The factor which has to be considered, in addition to disinfection, in the causation of the non-recurrence of plague among the inmates of a disinfected room, is the low contagious power of plague, even in the natives' own quarters—at all events in Calcutta, which is the only place I am writing about. The point is dealt with in the section on the spread of plague. The elements of incomplete isolation, segregation, and evacuation are estimated.”

After a number more cases are given in illustration of the value of disinfection, he adds :—

“The remaining cases show that the infection was slowly being disseminated, and I think it is a very fair conclusion that the infection was suppressed by the disinfecting operations. Recurrences of plague in the same room, after disinfection, have been rare, though such may have happened more frequently than is known, and escaped detection.”

He further says :—

“Taking all the facts into consideration, I think the non-recurrence of cases in a room after disinfection is attributable, to a large extent, to that process. The difficulty is to decide the proportion to be assigned to disinfection and the low contagious properties of plague respectively, and a possible natural destruction of the infection. But that difficulty does not militate at all against disinfection, because the object of the latter is to destroy, if possible, the poison in the room, which may gain virulence there and infect others quite apart from any actual sick in the room, and which may be carried to other parts of the house or *bustee* under the same roof. The experience gained here, so far as it goes, with special disinfections tends to show that either the poison must attain a certain degree of growth or virulence before it can infect human beings, or that the latter must be subjected to the infection for some time before they succumb. We have no means of knowing which is really the case, or, if either be true, to the exclusion of the other. I will give a case which seems to bear this out, which occurred in Dr. Hossack's district. A case of plague was removed from Shambo Nath Mullick's Lane on February 26, 1900, to 160, Harrison Road—a house with twenty-three rooms and ordinarily occupied by about seventy people—where there was no plague. The case was found on March 2. On March 30 a plague case was found in that house. On April 20 a man and a woman were found ill with the disease; on April 21 another man; and on May 5 another. Beyond the fact of all the cases being in the same house, no details are obtainable as to the rooms they occupied. The case is suggestive, but is not adduced to prove anything. Infection was introduced into the house, and a month after another case occurred, and two more cases a month after that, and then the remaining two cases occurred within a short period. It reads as though the poison had taken some weeks to attain virulence, but, having done so, attacked other people

more or less simultaneously. Again, the development may have been checked by the disinfections, even though every infected article used by the various patients was probably not dealt with."

And finally he sums up thus :—

"The fact, as regards disinfecting measures, is this: that a room in which plague cases have been lying for several days may be occupied with perfect safety, after disinfection, as soon as the operators have left the scene. The cases which, with few exceptions, will recur after that are those in which the disease was incubating at the time of disinfection, and it is an infinitely preferable measure to leave the people in the house than evacuate it, and let the disease develop in the patients in another locality—at all events, in a city like this."

Once more he says :—

"As I have already shown, where disinfection has been done on a large scale, plague cases have ceased, and disinfection of a single room renders it safe for immediate re-occupation.

"In short, the course of the epidemic may be compared to the circulation of the blood. There is a constant stream of blood, represented by the persistingly recurring plague cases prior to the severe outbreak, and each beat of the heart sends an impulse or wave, called the pulse, along the stream, corresponding to the sudden increase of plague cases. It is a rough illustration only, as the comparison fails in that one pumping source for the wave cannot be defined as in the human body; the facts point to several. The disease which bears the closest resemblance in its observed behaviour, and the mystery attending its comings and goings, is influenza.

"A review of these epidemics shows that the infection of plague haunts localities, not in a limited sense of recurring in a house, but in various habitations scattered over a large area. How the infection originally became planted in any locality is unknown, but once there, its depredations at first were mild, but fairly continuous, and increased as time progressed. How or why the infection should attack one or two persons in a room in a *bustee*, and appear next at another hut far removed, while adjoining ones remain free, is a question which, like a similar one regarding any other infectious disease, awaits solution. The one thing which, at present, it seems justifiable to say is, that the infection in such a case is largely independent of carriage by human beings.

“The indication in these infected localities is clearly to disinfect them thoroughly on a large scale, and to do so, moreover, when only sporadic cases are occurring, as the difficulty is enhanced when an epidemic is in full working. To put the matter in another way, we should try to render the places aseptic to as great an extent as is feasible and practicable.”

These conclusions of Major Deane's, based on numerous facts fully observed and recorded in the report, are of the greatest importance in dealing with plague cases: (1) The low contagious power of it; (2) the non-necessity of segregation; and (3) the immense value of disinfection. Lastly, the question of rat infection, which has so forcibly taken hold of the popular mind, comes to be discussed, and Major Deane finds no evidence that rats have been a cause of plague. I quote without details his summing up:—

“Rats have been associated with plague from the earliest mention of the subject. Mortality among rats is said to have presaged an outbreak of the plague among human beings, but no evidence is given as to how the rats got the infection. Moreover, there is little doubt that in many cases the statement of rats dying before human beings requires modification, because it has never been known when the human beings began to die of plague. When it has been recognised, the disease has been widespread. Though I wish to confine myself to Calcutta in this report, it will not be out of place to mention that in the epidemic, 1897-98, in Bombay, which was more severe than that of 1896-97, there were comparatively few rats in the city. It is not an unfair deduction to make that rats had nothing to do with the spread of plague in that epidemic. I think it a strained view to make rats the chief means of disseminating one epidemic in view of another and worse one with no rats to account for it.

“However, to return to Calcutta. This last epidemic was worse than that in 1899, and that was worse than the one of 1898. I have shown that from official records in 1898 human plague appeared in the infected localities before rat mortality was noticed. The rat mortality that year appears to have been small, even allowing for incomplete records.

“In 1899 there appears to have been a somewhat more diffused rat mortality, though the records are said to be incomplete. In the majority of instances given of rat mortality in plague-infected localities, human plague was known on an average 21 days before dead rats were reported.

“In the epidemic this year rats were first found in localities in which plague cases were occurring, and had been occurring at intervals the preceding six months, when no note was made of dead rats being seen or reported. Dead rats have been seen mostly in the streets, and comparatively few even in the aggregate, the reports mostly saying ‘2, 3, 4, &c., rats seen.’ How the rats get into the streets is a matter of supposition. Perhaps they are thrown out of rooms, but perhaps they are not. They have been found opposite, near, and in houses with no plague, and have been found mostly, where one might naturally expect them, about grain godowns.

“What the actual rat mortality has been is impossible to determine, or what proportion of the rat population has died.

“At 231, Durmahatta Street, where rats were noticed early (it is a large market), the plague cases were very few comparatively and scattered over the market, though it must be mentioned that many of the people who died of plague in *bustees* in the immediate locality worked in the market.

“If rats are an important means of spreading plague, it is curious why so few cases occurred in the localities where rats were noticed. The rat mortality this year began to rise with the human epidemic, and the inference to my mind is clear that men and rats get the infection from a common source. We know the infection to have been widespread over Calcutta, even in 1898, and in the two succeeding years the infection has become more virulent, attacking more people and also more rats. The appearance of plague in sporadic cases in separated localities can more reasonably be explained in other ways than by rat infection, especially when there is absolutely no evidence of rats in the places at all. Evidence is what is required, not an opinion that perhaps rats had been there and not been found. Perhaps they had not been there.

“In cases where rat mortality clearly precedes human plague in a street, it is no sort of proof that they took the infection there, which later shows itself in human beings.

“It seems unlikely that a rat affected with plague would go far from the locality where it got ill. It is said rats perhaps eat dead plague rats, and then go to another locality during the incubation, but perhaps they do not.

“Again, is plague infectious during incubation? We know of no disease which is infectious in that stage.

“The only explanation that covers the evidence, as it stands, is that human beings and rats get plague from a common source.

Rats get plague, and occasionally they may be the means of carrying infection which human beings contract.

"Rats dying of plague in a locality shows the presence of the infection and calls for disinfection.

"So far as Calcutta is concerned, up to the present there is no evidence that rats have had anything to do with the spread of plague, much less that they have been the chief mode of dissemination. So far from the human population having originally contracted infection from rats, the evidence is clear that rats have become infected after human beings, or contemporaneously with them, from a common source. As the epidemic grew worse, so did rat mortality become greater.

"If we knew how human beings get plague, we should know how rats get it, and *vice versa*, perhaps.

"Since writing the above, I have seen a report on plague in the Bombay Presidency, compiled by Captain Condon, Indian Staff Corps. The fact of human plague preceding rat mortality is very clear, and there is no evidence of rats playing a part at all in the spread of the disease."

This ends my presentment and summary of Major Deane's very able and exhaustive report. I think you will agree with me in considering it as of the highest value and interest in adding to our knowledge of the plague and its behaviour, and well worthy of being brought under the notice of the Society.

Dr. WILLIAM WARREN referred to the fact that nothing had yet been mentioned about fleas as a means of communicating plague. In Sydney it was said that the plague was spread by the dustmen who went from house to house, and who in consequence were much troubled with fleas.

Dr. HAWKES (Liverpool), in the Chair, said he wished to add his thanks to others which had been expressed to Dr. Dyce Brown for his contribution. At Liverpool they were looking out for the plague, and they had had one small scare over a suspected case. The pneumonia, which they were led to look for, was present in that case, with more or less lymphatic swelling. But an expert, who had much experience of the disease in Bombay, was good enough to come to the hospital, and he said that, though it was very much like plague, it was not actually such. He hoped the plague would not come, but if it did, their Hospital would be devoted to its treatment, as the

London Homœopathic Hospital was in the days of cholera, if the authorities granted permission.

Dr. DYCE BROWN thanked the members for the kind way in which they had received his contribution; he thought the matter was of sufficient interest to justify him in bringing it before the Society.

MODERN GASTRIC METHODS.¹

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A PAPER on this subject requires neither introduction nor apology. A practical knowledge of gastric methods is essential to every physician. The stomach is popularly believed to be essential to life. It is not so. One can live without a stomach. This important fact we owe to the surgeons. There is no organ more prone to disease. No organ is subjected to more maltreatment. No organ is more essential to the enjoyment of life. A good digestion is an invaluable asset. In the race of life the person with the good digestion invariably wins. Many practitioners can successfully treat gastric diseases. Yet many practitioners cannot accurately diagnose the disease. Ability to diagnose and ability to treat are not always blended in the same individual. The gastrologist who is brilliant in diagnosis is often outstripped in treatment by the general practitioner. In gastric disease the homœopathic practitioner has unrivalled advantages. Where the allopath has one remedy the homœopath has twenty. The ability to apply them is the study of every homœopath. In this, a careful diagnosis is an important factor. The purpose of this paper is to explain the modern gastric methods of diagnosis.

In doing so, a brief *résumé* of the stomach and its functions will be given. The anatomy and relation of the stomach are fully described in all the text-books, and doubtless well known to you all.

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The functions of the stomach are many and most important :—

(1) The stomach allows of the injection of considerable amounts of food at one time.

(2) It regulates the further progress of the food into the bowel, and most probably regulates the concentration of the contents.

(3) It mixes the food, and can reject irritating substances.

(4) It softens connective tissue in flesh, and helps to break down any large masses.

(5) It arrests the action of ptyalin, curdles milk, and has a slight inverting action on sugar, if free HCl be present.

(6) It inhibits and destroys many of the bacteria swallowed.

(7) It absorbs peptones, alcohol, &c., but not water.

(8) It digests proteids—its chief function.

In any description of gastric methods it is essential to consider the dietary. This has now been placed on a rational basis, and by simple arithmetical calculation can be treated in a scientific manner.

The normal diet for an animal organism contains the three groups of food stuffs, viz., proteids or nitrogenous substances, carbohydrates, and fats. The ideal physiological diet is one which contains the requisite amounts of nitrogen, carbon, inorganic salts, and water, to maintain a state of equilibrium. This diet varies with each person. The proper proportion between the nitrogen and carbon is 20 : 300 or 1 : 15.

In regard to food, the output ought to equal the input. Diminished output of carbon signifies increase of body fat. Diminished output of nitrogen signifies increase of flesh.

It is usual to make the calculation for the necessary proportions of food elements required to maintain the bodily equilibrium in an adult of 70 kilogrammes = 11 stones = 154 lb. in weight.

The daily average discharge of carbon is 230 grms. ; of nitrogen 15 grms. In addition, 2,250 cc. of water and approximately 25 grms. of inorganic salts are excreted.

	N per cent.	C per cent.	H per cent.	O per cent.	To produce N 20 grms.	To produce C 300 grms.
Proteid.. ..	15.16	50.53	7	21.22	140 grms.	600 grms.
Fat	—	77	12	11	—	389 „
Carbohydrate ..	—	44.4	6.1	49.5	—	680 „

Food element.	Amount in Grammes.	Proportion to Body Weight.
1.—Proteids	140	.2 per cent. = $\frac{1}{500}$
2.—Fat	100	.14 per cent. = $\frac{1}{700}$
3.—Carbohydrate	350	.5 per cent. = $\frac{1}{200}$
4.—Salts	30	.042 per cent. = $\frac{1}{2383}$
5.—Water	2500	3.6 per cent. = $\frac{1}{28}$

Or, to express it practically, a sufficient diet for a man will contain :—

Proteid	2 grammes
Fat	1.4 „
Carbohydrate	5 „
Salts .. .. .	.4 „

to each kilogramme of body weight, or nearly 1 per cent. of solid food in which nitrogen bears the proportion of 1 to 15.'

It will now be necessary to explain the standard scale. The unit of heat, termed the calorie, is the amount of heat required to raise 1 gramme or 1 cc. of water 1° centigrade.

The amount requisite to raise 1,000 grammes of water 1° is called a kilocalorie.

By experiments, the mean amount of calories in food of an adult per diem is 3,094,000 calories.

Now the heat equivalents are :—

Albumen 1 gramme	5,735 Calories.
Minus urea and portion in fæces	4,420 „
Fat 1 gramme	9,500 „
Glucose 1 gramme	3,742 „
If reckoned as starch.. .. .	4,182 „
If reckoned as cane sugar	3,955 „

A specimen diet for an ordinary man, *i.e.*, 70 kilogrammes, contains:—

Proteid	..	..	..	..	..	..	140	grammes
Fat	..	..	..	..	..	..	100	„
Carbohydrate	..	..	..	..	..	..	350	„
Proteid	..	..	..	140	grammes	×	4,420	= 618,800 C.
Fat	..	..	..	100	grammes	×	9,500	= 950,000 C.
Carbohydrate	..	..	..	350	grammes	×	3,742	= 1,309,700 C.
							Total	..	2,878,500

Body weight = 70 kilogrammes.

So calories per kilogramme = 41,121.

A sufficient diet for a man doing a fair day's work should therefore yield about 40 kilocalories for each kilogramme of body weight. As a general rule one-fifth of the total energy evolved is expended on mechanical work, and four-fifths appear as heat.

Deduct one-fifth from total heat equivalent; we obtain 2,302,800 C. = sum of heat produced, and 575,700 C. as the heat equivalent of work done.

Now the daily heat loss is in calories:—

1,822,500	evaporation of water	..	..	..	} Skin 87·5 per cent.
364,000	radiation	..	..	..
182,000	evaporation of water	..	..	..	} Lungs 10·7 „
84,500	warming expired air	..	..	..
47,500	warming urine and faeces	1·8	

The general rule is that the food should, under ordinary circumstances, be equal to from 35 to 40 kilocalories per kilogramme of body weight.

An old man requires	..	..	25-45	kilocalories per kilogramme
Sedentary	..	..	30-35	„
Confined to bed	..	..	20-25	„
Active man	..	..	40	„

In all the text-books lists are given of the food values of the different articles of diet, and it is easy to calculate from any dietary the amount of kilocalories per kilogramme of weight.

EXAMINATION OF THE PATIENT.

It is important to elicit the exact symptoms of which the patient complains and dismiss from your notes such terms as indigestion, dyspepsia, or, as one patient expressed it, “gastric

stomach." Each physician usually has his own method of examination. It is also important to obtain an exact description of the patient's dietary. Usually the food consumed on the previous day can be utilised as a sample, and each meal systematically described. A full twenty-four hours' dietary, with the symptoms after or during each meal, is usually sufficient.

The external examination is fully described in all our text-books and need not be enlarged on here. However, it is most essential in every case to examine the mouth, throat, abdomen, and lower bowel. The examination of the abdomen and rectum should never be neglected.

Usually from the subjective symptoms a fairly accurate diagnosis can be made, especially when accompanied by a knowledge of the dietary, mode of life, and thorough external examination.

Still, the above examination is often not sufficient, or the physician may wish to confirm his diagnosis by examination of the gastric contents.

The patient is usually ordered a test meal, the simplest being two cups of weak tea and a biscuit or a few rusks—this is Ewald's and Boas' test breakfast. Klemperer prefers milk in place of tea. Germain Sée adds a definite quantity of minced meat. Bourget prefers weak tea with tincture of mint and no sugar. Herschell recommends minced meat 1 oz., a lightly boiled egg, toast 3 ozs., and 5 ozs. of weak tea. Leube and Riegel give soup 13 ozs., scraped beef 2 ozs., and wheaten bread $1\frac{3}{4}$ ozs.

Experience teaches that it is better to tell the patient to take his ordinary meals and after one of these remove the contents. The time of removal will depend on the nature of the meal. A test meal such as those described often upsets the patient, and you do not obtain such an accurate idea of the condition of the gastric contents as you do when the patient takes his ordinary meals. The patient is examined three to four hours after his dinner. You ask him to sit on a low chair and tilt the head slightly forward. You take an ordinary stomach tube, ask the patient to moisten it in his mouth—do not lubricate it with glycerine or vaseline

—make him place his thumb or finger between his teeth, do not place yours in his mouth. A very short experience in passing the tube will convince you of the efficacy of this method. Push the tube gently; the difficult part is the entrance to the œsophagus. Ask the patient to take a deep breath, press the tube gently and firmly downwards, and you invariably find it gliding comfortably into the stomach. Never pass a tube on a patient suffering from a recent gastric hæmorrhage, or in cases of thoracic aneurism.

In neurotic cases you may require the patient to suck a pledget of cotton wool soaked in 3 to 5 per cent. of cocaine, and wait a few minutes before passing the tube.

Tubes are of different kinds, some with blind extremity and the aperture on the side, some with several apertures, some with aperture at end. It is better to use the larger tubes. The tube should be about thirty inches long, and may be attached by a glass tubing to another piece of rubber tubing. A glass funnel is fixed to end of rubber tube.

In withdrawing the tube, do so gently; never pull it up quickly. There is the risk of a piece of mucous membrane being drawn by suction into one of the apertures.

The contents are now removed by expression of abdomen or by the retching of the patient, or, if these fail, by syphonage or by use of stomach pump. Einhorn's gastric buckets are also useful in selected cases.

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MACROSCOPIC EXAMINATION.

Note the colour and character of the solids. Measure the amount withdrawn; one to two pints is not an abnormal quantity, unless obtained five hours after a light meal, or six or seven hours after a full meal.

Take specific gravity, usually 1002 to 1005: 1010 denotes hyperacidity; any figure above 1020 denotes hypoacidity. Specific gravity varies greatly with the amount of sugar present.

Note the odour of the contents: where fermentation there is a sour or disagreeable odour. If like that of rancid

fat = butyric ; sour = lactic ; vinegar = acetic. There may be the odour of sulphuretted hydrogen or putrefactive changes. Look out for any undigested food and for the amount of mucus : normally, the amount is about 3i. ; if in any excess, the condition denotes catarrh.

Examine for Blood.

In this it may be necessary to employ the microscope ; the guaiacum test is of little value. The microscope is of little value in examination of coffee grounds, as bile will present a similar appearance ; bile can be detected by Gmelin's test. If the deposit be formed of altered blood, in which the hæmoglobin is changed into insoluble hæmatin, two tests can be used :—

(1) Formation of hæmin crystals : Place a drop of the deposit on a slide, add a crystal of NaCl and a drop of glacial acetic acid, cover with a cover-glass, heat over a spirit lamp until bubbles begin to form. The small red-brown oblique rhombic crystals of hydrochlorate of hæmin will be seen, if blood pigment be present.

(2) Formation of Prussian blue. The patient must not be taking at the time any preparation of iron. Mix small amount of deposit with a little KClO₃ in capsule, and add 1 or 2 drops of HCl. Heat, and add a few drops of 5 per cent. solution of potassium ferrocyanide. If blood be present, Prussian blue is formed.

Pus also may be present. It is easily recognised under the microscope.

MICROSCOPIC EXAMINATION.

You can often, by examination of cells, tell the activity of digestion and recognise sarcina ventriculi and yeasts, species of bacilli, bacteria, and micrococci. The tests for these are found fully explained in pathological text-books.

Total Acidity = TA.

In every case the first analysis to be made is that of the total acidity. Total acidity = acidity due to acid salts, mineral and organic acids, free or combined with proteids.

Total acidity rarely reaches 0·3 per cent.: Schüle gives it 0·11 to 0·26 per cent.; Haynes and Winter, 0·18 to 0·2 per cent.

Now, healthy gastric digestion may be divided into three stages :—

(1) Fifteen to forty minutes *post cibum*: Total acidity increasing; lactic acid often present; free HCl absent; chief factor is combined HCl.

(2) From fifteen or forty minutes to two or five hours (with carbohydrates it begins earlier and terminates by the third hour): Acidity increasing; lactic acid, traces or absent; free HCl present; combined HCl in larger proportion; some of the fluids may have passed into the pylorus.

(3) From two or five hours to three or seven hours (till emptying of stomach): Total acidity now falling; free HCl present in greater proportion; combined HCl in less; contents entering pylorus.

Blue litmus paper will at once decide whether the contents are acid or not. A qualitative estimation is valueless; we wish a quantitative one.

We make a deci-normal solution of caustic soda. A litre of $\frac{1}{10}$ N. sol. caustic soda corresponds to 4 grms. of soda.

The method is based on the quantity of $\frac{1}{10}$ N. sol. of an alkali required to be added to a definite quantity of the contents before the reaction becomes neutral or slightly alkaline. Phenol-phthalein—an aniline—is used. Take a burette containing $\frac{1}{10}$ N. sol. NaHO, 10 cc. stomach contents in beaker, to which add a drop or so of ph.-phth. sol., or a few grammes of the powder. Add the $\frac{1}{10}$ sol. until a pink colour appears and remains permanent. Use a control in all the experiments.

If the gastric contents be highly coloured and indicators obscured, cleanse with charcoal; take the following case :—

5 cc. gastric contents.

Burette $\frac{1}{10}$ N NaHo stands at 34·3.

Drop in until reaction produced.

35·9 is now the reading.

1·6 represents TA. in 5 cc.

3·2 " " 10 cc.

Coefficient is .00365.
 Multiply 3.2 by .00365.
 = .011680 in 10 cc.
 = .11680 in 100 cc.

TA. of specimen = .11680 per cent. as HCl per cent.
 ,, = 32 by Ewald's method.

You can also record the percentage A. in terms of oxalic acid, sulphuric acid, &c.

One litre of $\frac{1}{10}$ N. soda solution corresponds to :—

Soda	..	..	..	..	..	..	..	4 grammes.
HCl	..	..	..	..	..	..	..	3.65 grammes.
H ₂ SO ₄	..	..	..	..	..	..	..	4.9 grammes.
Oxalic Acid	..	..	..	..	..	..	..	6.3 grammes.

Ewald's method is simply the number of cc. of $\frac{1}{10}$ N. NaHO required to neutralise 100 cc. of G. C.

Free Acidity = FA.

Any free acid.

Three reagents can be used :—

- (1) Congo red : as powder or papers.
- (2) Tropæolin : orange aniline dye.
- (3) Benzo-purpurin 6 β : aniline dye.
- (4) Leo's method : Place some G. C. in watch-glass, add small quantity of absolutely pure calcium carbonate, stir with glass rod, and test with blue litmus paper; keep a control.
- (5) Methyl violet : unreliable.
- (6) Bordeaux wine-colouring matter, bilberries, emerald green : all unreliable.

Free HCl alone.

(1) Günzburg's vanillin-phloroglucin test (solution consists of phloroglucin 2 grm., vanillin 1 grm., alcohol 30 cc.) : Evaporate a few drops of this reagent and an equal quantity of G. C. in capsule over a water-bath : bright rose-red colour denotes the presence of free mineral acid. Of the organic acids, tartaric acid alone gives the reaction; combined HCl does not give this reaction : it reveals the presence of 0.01 per cent. of acid.

(2) Di-methyl-amido-azo-benzol 0.5 per cent. in absolute alcohol: Place a few drops of G. C. on a porcelain plate, and add a drop or so of this reagent: rose-red colour denotes the presence of HCl.

(3) Resorcin (Boas') test (resorcin 5 grms., cane sugar 3 grms. in 100 cc. of weak alcohol): Gives pink reaction if HCl be present.

(4) Mohr's sulpho-cyanide of potassium test (2 cc. of 10 per cent. solution of KCNS added to 0.5 cc. of neutral solution of ferric acetate, add water up to 20 cc.): Peach-red colour denotes the presence of HCl. Not so delicate a test as the others.

Free Organic Acids.

The organic acids are acetic, butyric, citric, lactic, tartaric.

(1) Uffelmann's reagent, containing 10 cc. of carbolic acid, 1 or 2 min. of liq. ferri perchloridi, 20 cc. of aqua distillata.

Dilute mixture until claret colour. Lactic acid gives canary-yellow colour; 0.01 per cent. acid lactic will do this. Butyric acid gives grayish opalescent colour. Citric and tartaric same as lactic. Acetic and combined HCl give yellowish brown. Free HCl simply discharges the colour.

Always use a control. Alcohol, sugar, or phosphates, may give a similar reaction to that produced by lactic acid.

(2) You can also use dilute solution of ferr. perchlor. to 50 cc. of aqua distillata.

(3) Boas uses sulphuric ether and iodine test, when iodoform is formed.

(4) Distillation of G. C., when butyric can be recognised by smell. Acetates can be recognised by the cacodyl reaction.

The first test is the best and easiest to perform.

Quantitative Tests.

The different acid factors which require to be investigated are: (1) Total acidity; (2) constituents of total acidity;

(3) Free HCl; (4) combined HCl; (5) Presence of volatile and non-volatile organic acids; (6) acid salts.

Mintz's method for free HCl alone: Take a flat-bottomed evaporating basin and dry several cc. of Günzburg's solution on different places. Take 10 cc. G. C., add from burette $\frac{1}{10}$ N. NaHo solution carefully. After every few drops, test with the solution on capsule. You can easily determine the exact point when the free HCl is neutralised. Count off cc. on burette.

Take G. C. 5 cc.

Reading of burette at 22.2.

22.8 = neutralised G. C.

Subtract 22.2 from 22.8 = .6.

G. C. 5 cc. = .6 cc.

10 cc. = 1.2 cc.

1.2 cc. \times .00365 = .00438.

100 cc. = .04380 per cent.

Ewald's method = 12.

The chief objection to this test is that the presence of free organic acid vitiates the result.

You can also reverse this process in cases where there is no free HCl, and calculate the amount of HCl to be added before the affinities of all the proteids are satisfied.

HCl Free and Combined.

Sjöqvist: Take G. C. 10 cc., add barium carbonate 0.05 gm. Evaporate to dryness. Incinerate.

In ash, chlorine is present as barium chloride, organic barium salts as barium carbonate; bar. carb. insoluble in hot water; bar. chlor. soluble in hot water. So separate the two salts by washing in hot water (50 to 75 cc.). Filtrate the insoluble remainder. Solution which filters through contains all the bar. chloride formed from the HCl in the 10 cc. G. C.

Caustic soda converts barium chloride into barium carbonate.

Modification by van Jaksch: Here the barium chloride in the first filtrate from 10 cc. G. C. is converted into barium sulphate by adding pure H_2SO_4 ; the sulphate is caught on an ash-free filter paper, dried, ashed, and weighed.

Amount of barium sulphate $\times 0.3132$ = amount of HCl in 10 cc. G. C.

(3) Modification by Sjöqvist: Here the barium chloride from the ash by the addition of ammonium chromate is converted into barium chromate.

(4) Salkowski's modification: Here the barium sulphate in van Jaksch's method is converted into chloride by adding HCl, and he tritrates with AgNO_3 and chromate of potash.

This method or any of its modifications is theoretically perfect. The results indicate only the total chlorine present in the gastric contents, in the form of HCl, free or combined with proteids. It does not give the acidity due to HCl combined with albuminous bodies. So the results are often indefinite.

Estimation of all Acids present in Gastric Contents.

Toepfer's method (simplest):—

1st.—Estimate total acidity by phenol-phthalein.

Gastric contents = 5 cc.

Burette 23.4°.

With phenol-phthalein reaction, burette at 24.8.

Subtract = 1.4.

10 cc. = 2.8.

100 cc. = .10220 per cent. = 28 (Ewald's method).

2nd.—Now use 1 per cent. solution of sodium alizarine sulphonate in water, unaffected by combined acid.

G. C. = 5 cc.

1.3 cc. added when solution becomes violet.

10 cc. = 2.6.

100 cc. = .09490 = 26 (Ewald).

3rd.—Now use 0.5 per cent. of di-methyl-amido-azo-benzol in absolute alcohol.

G. C. = 5 cc.

Burette at 26.6.

1 cc. added to G. C. 5 cc. produces orange colour.

100 cc. = .0730 = 20 (Ewald).

Extra test:—

4th.—Use phloroglucin.

Burette at 27.6.

28.5 neutralises = .9.

10 cc. = 1.8.

100 cc. = .06570 = 18 (Ewald).

The results are :—

Total acidity = ·10220 or 28.

Free HCl = ·07300 or 20.

(1-2) Combined HCl = ·00730.

Organic acids and acid salts = ·02190.

Total HCl free and combined = ·08030.

This method is not very accurate. It is an easy method ; it requires no elaborate apparatus. It gives an approximate value. You can test this method by making artificial mixtures.

Proutwintner's method : By this method the chief factor is to obtain an accurate determination of the chlorine.

Measure out 5 cc. of G. C. into three platinum capsules or crucibles ; label them A, B, C.

To A add 5 cc. G. C.

Add 20 drops of carbonate of soda solution so as to convert all the chlorine into sodium chloride.

B add 5 cc. of G. C.

C add 5 cc. of G. C.

Place the capsules in separate sand-baths ; heat with Bunsen flame ; keep constantly on the alert to prevent any burning. Heat to dryness.

To B, after heating to dryness, add sodium carbonate 20 drops. Do not add anything to C.

In A, the total chlorine is in the form of inorganic salts.

In B, the chlorine, which has been left after evaporation to dryness, is in an inorganic form.

In C, simply the dried contents.

A = total chlorine.

B = combined chlorine and inorganic chlorides.

A-B = free chlorine.

C = dried contents.

B-C = organic or proteid chlorine.

Heat each of the capsules over a naked flame until all the organic matter in their contents has been burned off. Do this carefully ; you require a dull red heat ; too much heat will drive off the chlorides. After the capsules have cooled, add a slight *excess of pure nitric acid* and also some distilled water. Wash into beakers. Add 15 cc. $\frac{1}{10}$ N. argentum nitrate sol. to each of them. Filter, wash three or

four times with distilled water, tritrate with $\frac{1}{10}$ N. solution of KCNS (sulpho-cyanide of potassium), and use iron alum as indicator. The nitric acid renders the solution acid by neutralising, the effect of the sodium carbonate. It prevents any fallacy from the presence of phosphates; it also aids in the disintegration of the ash. Tritrate until pale salmon colour is produced.

1 cc. of KCNS = 0.00365 HCl.

A.—Here 17.9 cc. arg. nitr. sol. used and 12.5 cc. KCNS solution.

$17.9 - 12.5 = 5.4$ for 5 cc.

100 cc. = 108.0 cc.

Multiply by 0.00365 = 0.3947.

A = total chlorine = 0.3942.

B.—Here 10.5 cc. KCNS; 15 cc. arg. nitr.

$15 - 10.5 = 4.5$ for 5 cc.

90 = 100 cc.

Multiply by 0.00365 = .32850.

B = combined chlorine and inorganic chlorides = .3285.

C.—Here 5 cc. of KCNS and 6 cc. of arg. nitr.

$6 - 5 = 1$ for 5 cc. G. C.

100 cc. = 20.

$20 \times 0.00365 = 0.0730$.

C = inorganic chloride salts = 0.0730.

Total chlorine = A = 0.3942.

Combined chlorine and inorganic chloride = B = 0.3285.

Free chlorine = A - B = 0.0659.

Salts = C = 0.0730.

Combined chlorine = B - C = 0.2555.

Interpretation: Results show a high total acidity; free HCl.

You can also estimate the total acidity with phenol phthalein, and thus obtain a fourth factor. You can also continue this method with Mintz's method.

This method is a long and tedious one. The manipulations are difficult and complicated; the apparatus is most expensive.

Hoffmann condemns all methods for free HCl by evaporation as liable to fallacy. Biernacks says it only gives correct results in artificial digestion experiments. Others state that the free HCl is too small in amount.

A combination of this method with that of Mintz gives very satisfactory results.

Hayem and Winter : This method depends on the same principle as Proutwinter's. You use the three capsules A, B, C, and go through the same process as Proutwinter's.

The filtrates are tested with a $\frac{1}{10}$ N. sol. Arg. NO₃ (17 grms. to 1 litre) in the presence of neutral chromate of potassium.

The number of cc. of the silver solution in A indicates the total quantity of chlorine originally present in the 5 cc. of gastric contents. Similarly, in B it indicates the amount of chlorines remaining in the inorganic chlorides and the HCl combined. Capsule C indicates the amount of inorganic chlorides.

You can also estimate the total acidity by the phenolphthalein test.

You can compare the values of the free and combined HCl with the total acidity. If they be equal, there are no organic acids present. If they be less than the total acidity, then organic acids must be present.

Other Methods.

Cahn and von Mering : Filter gastric contents. Take 50 cc. ; distil over a naked flame until three-fourths have gone over. Fill up to 50 cc. with distilled water ; redistil until three-fourths have gone over. The distillate contains all the volatile organic acids. Tritrate with $\frac{1}{10}$ N. NaHO solution and calculate for 50 cc.

Shake up residue in retort or flask with 500 cc. of pure ether ; decant off the ether ; repeat six times ; collect all the ether decanted off, mix, evaporate, and tritrate with the soda solution. The result gives the quantity of lactic acid originally present in 50 cc. of the filtered gastric contents.

To the concentrated remainder a quantity of fresh precipitated cinchonin is added to excess until reaction becomes neutral. Wash into a separating funnel with chloroform ; shake up four or five times with fresh quantities of chloroform. Distil the solutions, drive off the chloroform, dissolve the residue in water rendered acid by pure nitric acid. Precipitate the chlorine with excess of argentum nitrate ;

weigh in usual way; reduce the silver salt to terms of HCl by multiplying the weight by 0.25427.

This method is most expensive, most complicated, and liable to errors.

Mintz-Boas' method (modification of Mintz's method): By the removal of organic acids by ether, decant the ether, calculate the free HCl in residue by adding $\frac{1}{10}$ N. soda solution until Congo-red paper no longer blued.

This method is also most expensive, and not altogether reliable.

Martin and Lüttke's method: This is a modification of Hayem and Winter's method; the dried contents are not subjected to so high temperature.

Lockhart-Gillespie method: Place 10 cc. in evaporating basin and 10 cc. in a beaker.

Place evaporating basin on a water bath and evaporate to dryness. Leave basin for an hour or so to dry. Add a small quantity of distilled water to a drop of the solution tested with phloroglucin. If HCl be present, again evaporate. Dissolve the dried residue in distilled water and stir it up freely.

The 10 cc. in beaker test for total acidity by phenolphthalein.

Determine the other 10 cc. similarly.

Other methods are:—

Contejean's method: Here hydrocarbonate of cobalt is used.

Hoffmann's method: Here estimated by inversion of cane sugar.

Braun's method: Here $\frac{1}{10}$ N. sulphuric acid used.

Mierzynski's gas volumetric method: here a ureameter is employed.

Significance of the Amounts of Acids.

The combined acid shows the amount of work done. The free acid shows the further capabilities of digestion. The free acid checks fermentation and also acts as an antiseptic. The gastric glands can regulate the amount of secretion of

acid. A meal of carbo-hydrates is usually followed by a low total acidity, and yet this does not necessarily indicate a small digestive power. Again, a high acidity after a meal largely composed of proteids does not invariably indicate hyperacidity.

Tests for Volatile Acids.

Place 20 cc. of unfiltered gastric contents in a retort. Add some water and shake up freely. Pour into a beaker 10 cc. of $\frac{1}{10}$ N. soda solution, and colour with blue litmus. Fit the beaker to the end of the apparatus. Drive steam through retort for thirty-five minutes. Collect the distillate, tritrate with $\frac{1}{10}$ N. H_2SO_4 solution, *e.g.*—

6.5 cc. of $\frac{1}{10}$ N. H_2SO_4 used.
 10 cc. of $\frac{1}{10}$ NaHO.
 Result = 10 - 6.5 = 3.5.
 $\frac{1}{10}$ N. soda solution contains 4 grms. to 1 litre.
 $3.5 \times 0.004 = 0.0140$ for 20 cc.
 " " = 0.0700 for 100 cc.
 Or 7 per cent. in basis of $\frac{1}{10}$ NaHO solution.

Digestive Power of Stomach.

This is a valuable test, and one most easy to perform.

Take three ordinary test-tubes, number them 1, 2, and 3.

In No. 1 place a definite quantity of filtered G. C., say 10 cc.

In No. 2 place 5 cc. of filtered G. C. and 5 cc. of HCl 4 per cent. solution.

In No. 3 place 5 cc. of filtered G. C. and 5 cc. of distilled water.

To each test-tube add a small quantity of carmine fibrin.

Place all the tubes in a bath heated to 38° or 40° C.; watch carefully. Whenever a yellowish-red discolouration appears, note the number of minutes necessary for the process.

The average time is :—

No. 1.—5 to 7 minutes.
 No. 2.—7 to 10 minutes.
 No. 3.—10 + minutes.

Lactic Acid Tests.

Filter some of the gastric contents; take two test-tubes, using one as a control. To No. 1 add one drop of ferric chloride. If lactic acid be present, there is a yellowish discolouration.

Second test: Make a solution containing a few drops of ferric chloride and one or two drops of carbolic acid. Divide into two parts; to one add a few drops of filtered G. C. If lactic acid be present, there is a yellowish discolouration.

Motility of the Stomach.

Salol is used for this purpose; olive oil and washing out stomach, Einhorn's gastrograph, Hemmeter's kymograph.

Powers of absorption are tested by KI; saliva tested for KI; rhubarb used; urine tested.

Size and position of stomach can be tested by bougie, Einhorn's gastrodiphone, Türck's gyromele, adding one litre of water, and percussion; Seidlitz powders given separately, and then percussion of stomach.

Test for Proteids.

All proteids contain CHNSO. There are two groups: (1) native and (2) derived.

The first step in all digestive processes is the formation of acid or alkali albumen, and these bodies, as digestion proceeds, are split up into albumoses, and these in turn into peptones.

Take 10 cc. G. C. filtered, add $\frac{1}{10}$ N. soda solution. If acid albumen be present = opalescence; add some more soda = flocculent precipitate.

Filter off the precipitate and wash with distilled water.

Boil the filtrate, and make acid by the addition of acetic acid. Filter off the coagulated proteids; wash precipitate with boiling water. The proteids remaining are albumoses and peptone.

You can now use the biuret test, or Fehling's solution, or xanthoproteic reaction.

By using neutral ammonium sulphate you can separate the albumoses from the peptone, as this solution precipitates albumoses.

Primary and secondary albumoses can also be estimated.

Sugar can be detected by Fehling's solution ; starch by adding a drop of the contents to a mixture of iodine, KI, and water : the blue colour indicates its presence ; a violet colour erythro-dextrin.

Saliva.

Tested by conversion of starch into dextrins or maltose, as evidenced by the colour produced on the addition of the iodine and KI solution.

Rennet.

Mix equal quantity of boiled milk of neutral reaction with equal quantity of neutralised and filtered G. C. Keep at 100° F. ; the milk coagulates in ten to fifteen minutes, if the milk-curdling ferment be present.

Clapotement.

This sound indicates fluid and gas, often obtained in healthy subjects.

Exact Quantity of G. C.

Remove a fixed quantity of G. C., and without extracting the tube, pour measured quantity of water into stomach.

Difference between the acidities calculated :—

B = undiluted portion ; A its acidity ; W = amount of water added ;
Y acidity of diluted contents.

$$Ax = YW + YX.$$

$$x = \frac{YW}{A - Y}$$

$$x = B + \frac{YW}{A - Y}$$

Lavage.

Washing with the following solutions :—

Warm water.

Boric acid, 3 per cent.

Sod. Bicarb., 2 to 4 per cent.;

NaCl, 1 per cent.

Auto-lavage.

Friedlich's apparatus, bulb near mouth ; Einhorn's gastric spray ; Turck's needle douche.

Classification.

A. *Acidity normal*—that is to say, total acidity = 0·25 to 0·35 per cent. ; free HCl—up to 0·1 per cent. ; lactic acid—only in early stages ; HCl combined with proteids—0·2 to 0·3 per cent. No free HCl in early stage unless food be free of proteids.

This condition of analysis occurs in (1) good health ; (2) gastric erosions—occasionally ; (3) carcinoma of cardiac orifice or of œsophagus—pyloric carcinoma, especially after ulceration ; (4) many cases of nervous dyspepsia, and dyspepsia following anæmia or chlorosis.

B. *Hyperacidity*.—(a) HCl increased ; total acidity high = 0·3 to 0·45 per cent. ; free HCl in excess—0·2 to 0·3 per cent. ; combined HCl normal. Free HCl appears early, first stage short. Lactic acid may be absent altogether.

This condition occurs in (1) gastric ulcer, gastric erosions ; (2) nervous cases ; (3) some dilated stomachs ; (4) gastro-succorrhœa, gastroxynsis.

(b) Organic acid increased, along with diminished secretion of HCl ; total acidity high and variable—0·3 to 0·8 per cent. ; free HCl absent, or in traces ; combined HCl, small amount, first stage long ; lactic acid present ; lactic and volatile fatty acids present during later stages.

This condition occurs in (1) carcinoma of pylorus and adjacent parts ; (2) dilatation of stomach (a) with pyloric obstruction, (b) with ataxy ; (3) atonic dyspepsia and chronic gastric catarrh ; (4) nervous cases ; (5) later stages of ulceration.

C. *Hypoacidity*.—(a) Acidity chiefly of HCl ; total acidity low—0·05 to 0·15 per cent. ; free HCl absent, or in traces ; combined HCl, small amount—0·05 to 0·1 per cent. ; all three stages protracted. Lactic present in all stages. Volatile organic acids in traces.

This condition occurs in (1) hypochlorhydria, without fer-

mentation; (2) acute gastritis, at beginning; (3) carcinoma without lactinal fermentation; (4) cirrhosis; (5) dilation, moderate, without fermentation; (6) fevers and purulent diseases.

(b) *Acidity due to organic acids*.—Atrophy, extreme; cancer; waxy degeneration; cirrhosis; phlegmonous gastritis; fever, most acute stages.

In this condition HCl absent or slight traces only. The acidity due to organic acids only.

Digestive Power.

A. *Normal or increase*.—Health; gastric erosions and ulcer; hyperchlorhydria; nervous cases; cancer of œsophagus and cardiac orifice; early stages of catarrhal dilatation due to pyloric obstruction, not to cancer; hypersecretions.

A. *Decrease*.—(1) Decrease of HCl. Cancer of pylorus and body, early stages; chronic catarrh, early stages; nervous depression; dilatation.

(2) Decrease of HCl and pepsin, or absence. Atrophy; cancer of pylorus; cirrhosis; phthisis, advanced; acute fevers and gastritis; chronic catarrh; dilatation, if accompanied by catarrh.

In functional disorders rarely is there any decrease of pepsin. In organic diseases HCl is first affected. In later stages pepsin is markedly diminished.

Duration of Digestion.

A. *Normal*.—Health: megalogastria; gastroptosis sine dilatatione; gastric ulcer; hyperchlorhydria; gastric erosions.

B. *Protracted*.—(1) From decreased motility: dilatation; cancer of pylorus, early; many nervous cases.

(2) From decreased digestive power: atrophy; acute gastritis; cancer of cardiac orifice and walls.

(3) From both causes: cancer of pylorus, later; cirrhosis; dilatation with catarrh; many nervous cases.

Dr. HAWKES, of Liverpool (in the chair), said he was reminded by the paper they had just listened to of a certain occurrence in English history. One of the judges of the land had to sentence a prince of the blood royal, and the king's remark was—"Happy the king who has a judge who will do his duty, and a son who will submit to it." He must say they were happy in having such an expert among them, and they would be happier still if their patients would submit to the ordeal.

Dr. ROBERSON DAY said it occurred to him that another method might have been adopted for the removal of the stomach contents, viz., the administration of apomorpha, which was very prompt in its action. By that means they would avoid the necessity for the amount of apparatus which Dr. Macnish had exhibited. He also would like, at a subsequent meeting, to hear Dr. Macnish's views on the *medicinal treatment* of cases in the light of his investigations.

Dr. HAWKES, of Ramsgate, said he had been very much interested in Dr. Macnish's paper, but he also had been wondering how many of them had such docile patients as would submit to the use of the instruments which had been handed round. He felt it would be very difficult to deal with private patients by that means, although in hospital it might work. He, like Dr. Day, had wondered why apomorpha was not given to remove the stomach contents.

Dr. SPENCER COX thought the paper showed that they had much more to learn with regard to diet, and if Dr. Macnish gave another paper on the subject he hoped it would show the connection between these tests and the subsequent dietary to be ordered. As opposed to some remarks that had been made, he thought that even if an examination did not lead them straight to the correct remedy for a case, it might point to the necessity for washing out the stomach or indicate the importance of some special diet, and so bring relief to the patient.

Dr. STONHAM thought there was looming in the future a more scientific proving of drugs by the Society, but he feared that as they proceeded further they would have increasing difficulty in obtaining provers, if it should become necessary to wash stomachs out constantly in order to arrive at their results.

The CHAIRMAN said that, as an old analyst, he could appreciate the difficulties of the methods, and he knew that many of them had not time to carry out all the details, so that they would be obliged to hand their specimens to an expert. With regard to the proving of medicines, in a large centre like London it was possible for one half to be pursuing the investigations while the

other half were proving medicines. He was very glad to have been present that evening.

Dr. MACONISH, in reply, said that instead of being thanked for his paper, the thanks were due from him to the members for their patient hearing and kindly criticisms, on a very dry subject. He had only given the bare hard facts. The practical application of what he had brought forward could not be discussed in a paper like his. In the matter of diseases of the stomach, Great Britain had been far behind France and Germany. In the case of the affections of the bladder no medical practitioner would think of giving an opinion without examining the urine, neither should an opinion be given on the stomach without examining the stomach contents. With regard to the use of apomorphia, there was danger attending it, and, in addition, he might say it was important that the contents should be in their pure state; the presence of apomorphia would complicate the tests. Moreover, the use of apomorphia was a painful process, whereas the tubes were simple, and, after the first time, were not objected to by the patient. The passing of the tube was not more objectionable than passing a catheter. The effect of the chemical tests upon the selection of diet and medicines—that was a large subject. He had tested one or two medicines, but not sufficiently to make an absolutely correct record. Still it had confirmed the provings. They would find, when analysed, it was remarkable how some provings corresponded with symptoms of gastric disease. In that of robinia, for example, it was important to be able to show in black and white that it made an alteration in the secretions of the stomach, and such a report was of much more value than any of their provings in the books, and more apt to convince the other school of the value of such a drug in disease. Suppose he analysed the gastric contents three times a week for three weeks, and obtained the ratio; then took robinia and made a similar analysis. If there were a distinct change in the hydrochloric acid secretion, that would convince most people that the drug had a distinct effect on the secretion. With regard to acidity, it made a considerable difference whether it was due to a volatile or to an organic acid. With regard to Dr. Stonham's remark, few people who were ill objected to the use of the stomach tube. They believed it was beneficial, especially if other methods had failed to cure the disease. He believed it would often be possible by employing the tests to determine whether operative procedure should be undertaken. In conclusion, he again thanked the members for the reception given to his paper.

PETROLEUM.¹

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Physician to the Oxford Homoeopathic Dispensary.

SYNONYMS.

EARTH oil, rock oil, naphtha, mineral oil, erdöl, steinöl, huile de pierre, bitume liquid.

DISTRIBUTION.

It is found in large quantities in the United States, in the Caucasus, and in the country situated at the mouth of the Danube; in considerable quantities in Burmah and in Galicia; and has been found in Persia, the West Indian Islands, Italy, parts of Germany, Switzerland, China, India, France, and England.

VARIETIES.

(1) American oil; (2) Russian oil; (3) that found in Germany and Galicia; (4) Burmese oil; this has only been imperfectly examined, and need not be further mentioned.

AMERICAN PETROLEUM.

This varies considerably in composition, but consists chiefly of hydrocarbons of the C_nH_{2n+2} series, the paraffin or aliphatic series—that is, they consist of *open-chain, saturated* compounds, and include representatives of every member of the series, from C_5H_{12} (pentane) to $C_{15}H_{32}$ (pentadecane), a solid substance which melts at $10^\circ C.$ and boils at $271^\circ C.$ There are also present small quantities of compounds containing sulphur, nitrogen, and oxygen.

Latterly, the United States have furnished a larger supply of petroleum than all the rest of the world put together; their only possible rival being the Baku wells, worked by Messrs. Nobel. In the State of New York petroleum was known to the aborigines, and was long

¹ Presented to the Section of Materia Medica and Therapeutics, December 6, 1900.

collected for medicinal purposes under the name of "Seneca Oil."

When crude petroleum is distilled, the various fractions are separately collected and used for a variety of commercial purposes. In America the distillation is conducted in large stills, and the first fractions, known as "cymogene" or "rhigolene," are condensed by artificial cold and pressure. This fraction probably consists chiefly of pentanes, which readily vaporise in the air, and are used for the purpose of making an imitation coal gas for country houses, country churches, &c.

The next fraction is known by a variety of names, as gasolene, naphtha, benzine, or benzole, and used as a substitute for turpentine. It is to be noted that the benzine and benzole have nothing whatever to do with the benzene or benzol of the chemist; the former being *open-chain* hydrocarbons, the latter a *closed-chain* hydrocarbon, and the beginning of the aromatic series of compounds. Petroleum ether consists of rhigolene and gasolene, while petroleum spirit or benzoline consists of the naphtha and benzine fractions.

The next fraction is less volatile, and is known as "kerosene" or "photogene." This is the part used for lamps; and to make the oil suitable for this purpose, the very volatile compounds must be got rid of, else they would form explosive mixtures with air. The higher boiling-point portions must also be got rid of, as they would clog the wicks. It ought, further, to be "refined," *i.e.*, to be washed first with sulphuric acid, then with caustic soda, and lastly with water.

The residue in the retort is next distilled for the semi-solid fraction consisting of vaseline and lubricating oils. Lastly, we get the solid paraffins or ozokerite, which is used for candles, under the name of "paraffin wax." It is also used for electric insulators, mounting morphological specimens, and a variety of other purposes.

Asphalt ("earth pitch") is formed by the action of oxygen on the higher boiling-point earth oils. This, as you know, is used for cements, salves, in asphaltting, photo-lithography, &c. It is found in India, Trinidad, Java, and Cuba.

It is a point of some interest (if you will permit the digression) to trace the history of the origin and rise of this great petroleum industry. In 1847 a Mr. James Young, a Glasgow chemist, was induced by the late Lord Playfair to lease a small petroleum spring in Derbyshire, with a view of turning the material to commercial advantage. As a result of his experiments Young was enabled to prepare two kinds of oil from the crude petroleum, one for illuminating purposes the other as a lubricant. He also found that it yielded considerable quantities of *paraffin*, but this was not at first separated for trade purposes. By the beginning of 1851 the supply of oil from the spring had ceased; but in the meantime Young had been making a series of experiments in connection with the destructive distillation of coal, and in October, 1850, he obtained letters patent for the "obtaining of paraffin oil, or an oil containing *paraffin*, and paraffin from bituminous coals." For this purpose he first used "Boghead cannel," but by 1866 the supply of this mineral was exhausted, but long before this it was discovered the bituminous shales would answer the same purpose. Young now had three oils: (1) illuminating, (2) lubricating, and (3) solid (*paraffin*) for candles.

But the development of this industry in England had attracted the attention of our far-seeing American cousins, and as a result of their experiments it was soon discovered that petroleum was peculiarly rich in the various *paraffin* products. This gave rise to the vast petroleum industry of America which to a great extent destroyed Young's business.

Mr. Young's name will also be remembered in connection with another trade revolution. In his investigations of the products of the destructive distillation of coal he prepared pure *anthracene*, a solid hydrocarbon found in coal tar, and gave it to Dr. Anderson, of Glasgow, who determined its composition, by analysis, as $C_{14}H_{10}$. Up to this time it was supposed by Laurent to be a polymer of naphthalene.

In 1868 Graebe and Liebermann distilled alizarine with zinc dust and got a substance identical with Young's anthracene. From that moment the extensive madder industry in France, Central Asia, and the table lands of the Caucasus,

was doomed. It, however, took these chemists three years to prepare alizarine from anthracene. The difficulty was to get in the hydroxyls. They first oxidised anthracene to anthraquinone, then treated it with bromine, and subsequently with caustic potash, which removed the bromine and left hydroxyl in its place. But this could not be used on the large scale because bromine is too dear and its vapour too irritating. Now comes the last link in this remarkable chain. W. H. Perkin, sen., used Nordhausen sulphuric acid instead of bromine, and subsequent fusion, with caustic potash. Hence the immense dye industry of W. H. Perkin, father and son.

Before 1864 very little accurate knowledge of the chemical constitution of the various petroleum oils was known. In fact, such knowledge before this date was practically impossible. Early in the sixties organic chemistry was just emerging from the type theory. The *structural* method of formulation was in the ascendant, and mainly through the efforts of Frankland, Williamson, Odling, Kekulé and Kolbe, the genetic relations of the fatty or aliphatic series of hydrocarbons had been made clear. Further it was only in 1865 that Kekulé advanced his now famous benzene theory, the result of an after-dinner dream on the top of a London "bus" in the neighbourhood of the Marble Arch; of this more anon. In the neighbourhood of the North American oil wells methane (or marsh gas) is evolved, and is associated with ethane in the gas of the Delamater gas well in Pittsburg. There are also present some olefines, as well as *traces* of benzene and of reduced benzene compounds (as hexahydro-benzene) such as constitute the main bulk of the Russian oil.

RUSSIAN PETROLEUM.

The oldest known source of this oil is Baku, where Messrs. Nobel have very extensive refineries. It is a much finer oil than the American variety, and has a high illuminating power. Baku lies on the west side of the Caspian Sea. The surface is generally level; the soil is rocky and sterile, without one attractive spot in its whole extent, and

without any water but that which is drawn from wells, and this has a salt, disagreeable flavour. Not a tree exists upon it; but portions of the territory have a layer of mould on which wheat, barley and maize, melons, fruits, rice, and cotton, and, on the highest ground, saffron, are raised. There is also a species of red and highly-savoury onion, which is not found elsewhere, cultivated under cover.

The peninsula is celebrated for its mud volcanoes, and for the superabundance of petroleum, with which its soil is charged. It not only issues spontaneously through the surface, but rises whenever a hole is bored. In ancient times the burning fields, or the "Holy Fire of Baku," was one of the most celebrated shrines of grace among the Parsees, and was a spot to which thousands of fire-worshippers resorted.

Russian petroleum, unlike the American, consists chiefly of hydrogenised aromatic hydrocarbons, or naphthenes, of general formula C_nH_{2n} —isomeric, therefore, with the olefine hydrocarbons, but in the form of closed chains, and, in their behaviour, resembling *saturated* bodies, *i.e.*, they do not show the various additive reactions which are characteristic of olefines, such as direct union with bromine, fuming sulphuric acid, hypochlorous acid, &c.

It is a more complicated mixture than the American product. Baku petroleum gives off a large volume of inflammable gas, and leaves on distillation a vaseline having all the properties of the American product, except that its density is higher. As I have already stated, they are isomeric with the olefine series of hydrocarbons. Subsequent investigators have concluded that these so-called "paraffenes" are the hexahydrides of the benzene series of hydrocarbons, such as those obtained synthetically by the reduction of benzene by metallic sodium in the presence of amyl alcohol; they are now called "naphthenes," and seem to stand midway between the aliphatic and the aromatic series of hydrocarbons. The oil obtained from Tifis appears to be intermediate in character to that of the American and Baku products.

GERMAN AND GALICIAN PETROLEUM.

This is characterised by the presence of a large amount of *aromatic* hydrocarbons, and contains such products as benzene itself, toluene, or methyl benzene, one or more of the xylenes or di-methyl benzenes, pseudo-cumine, and mesitylene, or tri-methyl benzenes.

In Germany the crude naphtha is refined into four distinct products:—(1) Petroleum ether, (2) benzine, (3) ligroïn, (4) cleaning oil.

I would ask you to notice very specially the presence of these "*aromatic*" hydrocarbons in German petroleum, for in this respect it differs very markedly from the other two varieties. Aromatic compounds caused some little trouble to the founders of the "structure theory." In 1864, in contradistinction to the now well-known (from the *structural* point of view) fatty hydrocarbons, there stood a group of aromatic substances, not as yet very numerous, which, in composition and behaviour, differed widely from the former, and which seemed to form a marked exception to the laws of valency and structure laid down for all carbon compounds. It was here that Kekulé, by his happy idea of a ring formula, surmounted the difficulty. The fruitfulness of this idea has been phenomenal. The technical development of benzene and its derivatives employs over 15,000 workmen in Germany alone; the commercial value of the products reaches millions of pounds; and by far the greater portion of the research work done to-day is concerned with the same group of substances. Nearly all of this tremendous activity is due to a single *idea* advanced by Kekulé in the year 1865, who in doing so created a new epoch in the science of chemistry and in commerce.

ORIGIN OF PETROLEUM.

(1) For a long time it was taken for granted that it was distilled by subterranean heat from the beds of coal, leaving a residue in anthracite; even at the present day this is probably still the most *popular* idea. But we shall see in a

moment or two that petroleum occupied fissures in the Silurian and Devonian strata of America long before the trees of the coal period were growing in their native forests.

(2) Sterry Hunt, and many geologists, believe that petroleum has been formed by the decomposition of *organic matters* of animal origin, such as fish, and advance the presence of nitrogen compounds, and direct experiments with animal fat, in support of this view—"train oil," for example, is a mixture of paraffins, produced by the decomposition of fats by heat under a high pressure. Certain limestones in the United States are highly oleiferous, and near Chicago there are enormous deposits of this oil-bearing limestone.

(3) Mendeléeff has given considerable attention to the subject, and has advanced strong reasons for believing that mineral oils have not been produced, like coal, from the decomposition of past vegetation. He believes that it is formed in the depths of the earth beneath the very site where it is found, since it cannot be water-borne.

The absence of any large masses of organic matter in the oil districts negatives the vegetable origin of petroleum. In Europe the oil wells belong to the tertiary and late geological periods, but in America and Canada the oil-bearing sands are found in the Devonian and Silurian formations, and hence *below* the carboniferous beds.

The oil beds always run parallel to mountain ranges, and Mendeléeff believes that water has found its way through the fissures formed at the upheaval of those ranges to the metallic carbides below, resulting in the formation of metallic oxides and hydrocarbons. It is well known that lithium, calcium, barium, and strontium carbides give with water at the ordinary temperature almost pure acetylene; aluminium and beryllium under the same circumstances give almost pure methane. Uranium carbide gives a complex mixture of hydrocarbons—gaseous, liquid, and solid.

This theory as to the origin of petroleum is supported by the frequent presence of sulphur in crude oils and the presence of many metals in the ash of asphalt. The occurrence of petroleum in the lavas of Etna gives additional support to the theory.

From what I have said, it is very evident that the substance called petroleum varies much in composition according to its particular source. There are two points one would like to know: (1) The source of the petroleum used by Hahnemann in his provings; (2) the source whence the chemists of the present day procure their petroleum.

Which of the three chief varieties did Hahnemann use? If he used the German or Russian variety and we use the American, we can hardly expect to get concordant results. The substance he used in his proving he calls the liquid part of commercial petroleum. This he washed with sulphuric acid and then rectified. From this description it is very unlikely that he was dealing with a pure substance in his provings. It seems to me that the substance to be used for proving should be either:—

(1) The crude substance, just as it comes from the bowels of the earth, without any previous preparation or purification; for the crude substance alone deserves the name of *petroleum*. The particular source, of course, should be distinctly stated, so that one might know whether he was dealing with open-chain paraffins, cyclo-paraffins (naphthenes), or aromatic compounds, for we have no right to assume that their effects on the human body would be the same. Or—

(2) To purify the crude petroleum completely—much in the same way one would do in order to separate, in the pure state, an unknown hydrocarbon from an unknown mixture of substances:—

(a) Treat the mixture with a solution of neutral permanganate of potassium in the *cold*. This will convert olefines into glycols (diatomic alcohols), but will not oxidise side chains; hot permanganate would. Shaking up with strong sulphuric acid will also remove olefines, but the above way is the better.

(b) Wash with water, to remove alcohols and oxidised olefines.

(c) Wash with caustic soda, to get rid of acidic substances.

(d) Distil it from metallic sodium and then fractionate till we get a liquid of constant boiling point.

Pruritus ani.—I will now give a short account of a case where petroleum was particularly successful in this affection; and I hope, in the discussion which follows, that each of you will contribute something of value to the treatment of this troublesome affection. In calling it troublesome, I must be understood to be speaking for myself, for I hope that you are all more successful in the treatment of such cases than I am.

I need hardly describe to you the objective or the subjective symptoms of this affection: the scurfy, leathery, and cracked skin round the anus, sometimes dry, more often moist, and frequently associated with tabs of skin—the remains of withered external piles—as well as red tubercles, &c.; the intense itching, often by day, preventing one from sitting quietly; more frequently at night, preventing or disturbing sleep.

About fourteen months ago a clergyman came to consult me concerning this complaint. The symptoms were very meagre and general. All he complained of was the itching. The anus had the usual appearance: hard and leathery, with cracks and tubercles. I found out further that he was subject to diarrhœa, but that this never troubled him at night. I did not attach much importance to this in the first instance, thinking that it was most probably due to his rather convivial habits, and consequently of little importance as an aid to the discovery of the *simillimum*. On that point I believe I made a mistake.

I gave him a bottle of petroleum, 2x tincture, with directions to take it several times a day, unless untoward symptoms showed themselves, or unless he was distinctly relieved, when he was to stop it and write to me. Two days after he wrote to say that the “paraffine” had completely cured him of his pruritus, but complaining very much of the diarrhœa, which was so much worse that he was unable to leave his house; this was a great trouble to him, as he was very fond of shooting. There was *no diarrhœa during the night*, but it was very troublesome during the day, especially after food, though it was quite painless. The question is: was the petroleum the cause of this very marked aggravation of a diarrhœa already existing?

Why did I give petroleum in this particular case? I am ashamed to say that I cannot give you one good or sufficient reason. I had often determined that I would try petroleum sometime in this affection, as it seemed a likely remedy; but I am afraid that was my only reason. Looking back on this case, I am inclined to think that pruritus ani, in a person who is subject to diarrhœa, is the most likely class of case to be benefited by petroleum; the diarrhœa in this case being a *concomitant* symptom. On the strength of this, I have prescribed it in another case where there was a similar concomitant symptom, with marked benefit. I have also given it in two or three other cases where there was no tendency to this *diurnal* diarrhœa, with absolutely no benefit at all.

In Hahnemann's pathogenesis of petroleum, it is true we find "itching of the anus" and "scabs round about the anus"; but dozens of other remedies have the same symptoms, so that these symptoms are of very little value to us in prescribing. What we need is to find some trustworthy "condition" or "concomitant."

If the subject is not a forbidden one, I would here point out the need of a complete and properly-arranged repertory. The second volume of "Curie's Jahr," in its day, was most excellent, and indeed is so still, as far as it goes. In regard to arrangement, however, there is no doubt that the "British Cypher Repertory" is far above and beyond all others THE best; but its scope is limited, and its cypher interferes sadly with its utility and general acceptance. Its arrangement is as nearly perfect as anything on this earth can be:—

(1) The symptoms in the prover's own words as far as possible.

(2) The conditions of amelioration and aggravation.

(3) The concomitant symptoms.

I believe that these three leading groups will include all that a prescriber needs, not to enable him to decide upon the appropriate medicine, but to send him to his *materia medica* for confirmation or the reverse. As regards *materia medica*, the more complete the better, *e.g.*, Allen's *magnum opus*, Hahnemann's own writings, and last, but not least,

Dr. Hughes' "Cyclopædia," which may be described as a rectified materia medica of constant melting and boiling point, like all pure substances.

I have not mentioned Dr. Hughes' "Index," but you are not to infer from that that I slight it; but it is not a general repertory, but is merely the index of a few particular books, and does not even mention itching of the anus under petroleum at all; for, so far as it is concerned, the "Chronic Diseases" stands in the Index Expurgatorius.

In closing this paper I would remind you of the deeply-fixed popular belief in the virtues of petroleum as a "hair restorer" and as a local remedy in chilblains. It has recently been suggested as a preventive of malarial fevers, since it appears to be fatal both to the mosquitoes and their larvæ.

The PRESIDENT said they all felt grateful to Dr. McLachlan for coming such a distance to read his paper.

Dr. BLACKLEY said that the paper carried him back five and thirty years to the benches of the lecture theatre, when he was a student. He was sorry that his chemical education had terminated just at the very commencement of the periodic epoch. The paper showed that Dr. McLachlan had been working at the subject *con amore*, and working as a therapist as well as a chemist. They must all envy him the opportunity which he had had during the last three or four years of working on these recondite subjects in the beautiful chemical laboratory at Oxford. We knew there were virtues in the mineral oils which had been referred to, but we should be very much better off if we knew what these virtues were due to; if we could, for instance, have the ultimate substances which made up the three series of oils parcelled out, that would be something like getting abreast of the very latest developments of science. He had no knowledge of the use of petroleum for pruritus ani, but he had used it a great deal for pruritus of the skin generally. It was precisely in that leathery cracked condition of the skin in which there was a certain amount of hyperæsthesia that petroleum did good. The last use of petroleum that Dr. McLachlan had referred to, namely as a parasiticide for malaria-bearing mosquitoes, was very interesting. All he could say was, that he hoped they would give the mosquitoes a good dose.

Dr. McNISH joined in thanking Dr. McLachlan for the chemical treat that he had given them. His experience of

petroleum from the practical point of view had been as a medicine for persons of the strumous diathesis, especially the dark type, who suffer from catarrhal conditions of the mucous membranes, gastric acidity, and cutaneous eruptions. He had used petroleum unsuccessfully for pruritus ani. He found that the pruritus was quickly allayed by very weak solutions of menthol. Petroleum was of course popularly known to be a hair restorer. Its use in the treatment of malarial disease, caused by the mosquito, was very interesting and it was to be hoped that it would turn out to be a permanent cure. He had used petroleum successfully in treating a young girl of the strumous type suffering from acne vulgaris and similar eruptions. She also suffered from affections of the mucous membrane, *e.g.*, leucorrhœa and nasal catarrh. Some persons who suffered from hyperacidity found petroleum often very efficacious. The point which Dr. McLachlan had raised as to there being three kinds of petroleum was very important, and it would be well for those who used petroleum to find out which sort was being made use of.

Dr. Epps said that the use made of petroleum in the treatment of skin diseases was not very large. Petroleum mixed with water and a little spirit was the best lotion he knew of for the relief of itching, and he had seen many cases not simply relieved but cured in a very short time. Petroleum was extremely useful for the cracked hands which were made worse by washing, when it was made use of in the form of an ointment. It was not the grease that produced the effect, because a simple ointment used alone, without the petroleum, did not act half so well. When ten or twenty drops of spirits of petroleum were well mixed in an ounce of spermaceti ointment the cure was more lasting. He had seen petroleum do good service in pruritus ani. He always thought that the symptom which indicated petroleum was the moist condition around the anus. Patients often complained of this moisture, and that they always felt damp and had intense itching. He would like to ask Dr. McLachlan a question about vaseline or petroleum fat. In some cases the vaseline suited very well for ointments, and in others it brought out an erythema or eczema. Was the reason that there were two sorts of vaseline or petroleum jelly, or was it that one was impure and the other rectified? As to the petroleum emulsion which was advertised so largely, and which it was said was to take the place of cod-liver oil and other fats for consumptives, he wished to ask what became of the emulsion when it was swallowed, and what was the action of the digestive organs upon it. A friend of his, a chemist, said that it was absolutely useless and could do no good. Other persons, again, said that it was the very finest thing possible.

He would be glad to hear Dr. McLachlan's opinion on this point.

Mr. JAMES JOHNSTONE said that he thought that they must congratulate the secretary of the *Materia Medica* Section upon having brought Dr. McLachlan from Oxford to give them such a refreshing paper. The members of the Society were apt to travel along old and well greased grooves, but the present paper was certainly out of the common and very instructive. He wished that more of their papers were imbued with the scientific spirit which ran through Dr. McLachlan's paper. He wished to ask Dr. McLachlan a question arising out of his remarks upon the source of petroleum. The paper mentioned the theory that petroleum might come from the action of water on the carbides in the primary rocks while they were in a state of ignition. The chemistry of the present day was quite new, and those who have been brought up in the somewhat old school could understand that carbon was associated with animal and vegetable matter. But how did carbon come to be in the primary rocks? Was there any substance or compound in the primary rocks which contained carbon? Like Dr. Epps, he had been thinking of the properties of vaseline, a substance which sometimes irritated and sometimes relieved. Vaseline was one of the more solid hydro-carbons of the petroleum series, he believed, and therefore, from what Dr. McLachlan had told them, they could explain its soothing action in certain skin affections. But sometimes it irritated. Why was that? Probably it was because it was impure and contained some irritating bye-product.

Dr. ROCHE (London) said that some years ago he made the acquaintance of a very interesting friend from America, who introduced petroleum to his notice, and since then he has used the substance very frequently with very great benefit. One use which had not been mentioned was its undoubted efficacy against sea-sickness. The American friend was a little man of a bilious type, and when he was coming over from America he almost annihilated the miseries of the voyage by the use of petroleum. Since then he (Dr. Roche) had used it over and over again for persons of that type with most remarkable results. Given in higher dilutions it certainly had been most wonderfully successful. He had also used petroleum a great many times in cases of irritable ulcer, not varicose ulcers, in old people. In these cases the applications had been both local and internal, and the results had been very good. He had also used it in pruritus ani with satisfactory results. Its use in diarrhoea was certainly a very good suggestion.

Dr. GOLDSBROUGH said that he had enjoyed the paper immensely. The chemical origin of the various petroleum was

certainly a very fascinating speculative subject. His lessons in chemistry had been received so long ago that he should be very much obliged to Dr. McLachlan if he could, from a theoretical point of view, give them a little more information as to the difference between compounds developed along the line of the chain and those developed in the form of a ring. Some years ago, a washerwoman came to his dispensary as a patient, who had covered her forearms with paraffin oil, intending, he believed, to soften the skin so that it should not crack after she had been following her occupation. Both forearms were covered with an acute eczema in at least two of its stages, the erythematous and the vesicular stage. It was a typical example of acute eczema which evidently resulted from the application of petroleum. It yielded readily to local and internal remedies.

Mr. KNOX SHAW said that his use of petroleum had been extremely limited, but he felt pretty certain that by the use of petroleum 3x, or 3, blennorrhœa of the lachrymal sac, when it arrived at the stage of the mucoid discharge, could be relieved. It was of no use in the purulent stage. He had found that ordinary vaseline frequently caused local irritation. He was not chemist enough to know the difference between ordinary petroleum vaseline and white vaseline; but he knew that white vaseline was much less irritating, and he frequently used it as the sole basis of an eye ointment, or he used it to dilute the ordinary boric acid ointment, which was too stiff for satisfactory application to the edges of the lids in blepharitis.

Dr. VINCENT GREEN said that Dr. McLachlan had raised one very important question, and that was what our patients were given when petroleum was prescribed. They had heard of, at any rate, three distinct varieties; did all chemists use one variety? At any rate, it would be interesting to know with which variety Messrs. Gould supplied the Homœopathic Hospital, and where it came from. At a post-graduate lecture in the hospital by Mr. Knox Shaw on the treatment of piles, he said that he had been cheated out of many an operation suggested to relieve the pruritus by an ointment which was made of equal parts of white vaseline and boroglyceride. He thought after what had been stated, the benefit might be ascribed to the vaseline rather than to the boroglyceride, as suggested in his lecture by Mr. Shaw. In connection with vaseline it must be remembered that the word vaseline was the copyright of the Cheesborough firm, and that other firms manufacturing it were obliged to call it petroleum jelly. The Cheesborough preparation was undoubtedly the best, and practitioners should warn their patients not to accept any preparation other than vaseline. Some slight experience of the therapeutics of petroleum had been obtained in the out-patient department of the hospital in con-

nection with the nose, ear and throat; and he had also used petroleum in private practice. The keynote seemed to be dryness in the ears or nose. He had used it with success in cases of soreness in the vestibule of the nose when the soreness was not due to purulent discharge, when obviously the treatment must be directed to the discharge.

Dr. NEWBERRY said that he had noticed an enormous amount of eczema at Plymouth. During the last four or five months he had seen at Plymouth more cases of that disease than he had seen elsewhere within the same number of years. He was not the only one who had observed the large number of cases at that place. Dr. Alexander had remarked the same thing. In the case of a young lady who had been troubled with eczema at intervals for some years, especially on her hands, the remedy which had been found most efficacious was petroleum 30, a lower attenuation having caused marked aggravation. He would like to know which of the three petroleums that had been described that evening was most likely to be the true simillimum. There were three sorts, the American, the German, and the Russian, and he would like to know how they were to be distinguished.

Dr. SPENCER Cox said that he should be glad if Dr. McLachlan could give them some idea of the actual value of the petroleum emulsion which had been advertised very much. He had tried it himself several times, but he had not seen any benefit follow its use except in one case, and here he had ordered a quantity of milk at the same time, to which the improvement was probably due. In cases of sea-sickness, for which it had been recommended, he had tried petroleum without any satisfactory result at all; possibly because he had only used the 3x dilution. With regard to its external use for pediculi, it was certainly very good indeed.

Dr. McLACHLAN, in reply, thanked the meeting very sincerely for the way in which they had received his paper. Most of the remarks had been very interesting to him. Whether or not the petroleum which they got from peat was the same as was got from the earth, was a question on which he was not quite sure. He believed that the material which was called paraffin in the days of his youth was obtained from peat. As to the difference between the white and the yellow vaseline, he had understood that it was simply due to bleaching, but he could not say with certainty. There were two well-marked types of vaseline, the Russian and the American, and they differed in physical properties.

Mr. KNOX SHAW asked whether bleaching would alter the properties of the petroleum.

Dr. McLACHLAN replied that he could not say, but bleaching was a kind of oxidation. He could not say anything with regard to Angier's petroleum emulsion. He had only used it

once. Mr. Johnstone had asked about the presence of carbon in rocks. The carbonates of course would contain carbon. There was one peculiar thing in connection with his acetylene lamp which he used in country work. It was that, if he left the carbon damp for some little time, he got any amount of ammonia when he opened the reservoir, and if it stayed very long he got Prussian blue formed. They knew that magnesium had an extraordinary affinity for nitrogen, so much so that it combined with it and produced a great amount of heat, and this all happened in the lamp. They got first prussic acid and then Prussian blue. He had obtained a great deal of information from those members who had spoken. It was too late to give any further information about chains and points of that kind. Mr. Shaw's remarks were exceedingly luminous. As to the emulsion, he might mention that it had no animal fat. Animal fat was a kind of salt, being a compound of an acid and a base, the base being, of course, always glycerine. The only likeness was that all these were open chain compounds. There was no branching chain. All the chains were straight or normal chains.

VALUE OF SUBJECTIVE SYMPTOMATOLOGY.¹

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THE subject of my paper for this evening was suggested to my mind by a perusal of a short article contributed by one of our members to the October number of the *Review*. It seemed to me that the subject was one which might with advantage be discussed more at length. I have therefore ventured to bring forward this paper as my contribution to the discussion of a topic which is intimately and peculiarly bound up in the structure of a rational homœopathic philosophy.

Putting it shortly, I think you will agree with me that Hahnemann's contribution to the development of the science and art of medicine was two-fold, of which one part dealt with the science and the other with the art of medicine. The contribution to the former was embodied in

¹ Presented to the Liverpool Branch December 13, 1900.

the new views which he advanced (1) as to what is to be cured in disease, and (2) as to what is curative in medicines ; whilst the contribution to the latter lay in the rule he promulgated by which what is curative in medicines can be adapted to what is morbid in the patient, so that a recovery must ensue.

This paper does not concern itself with the validity of the law *similia similibus curentur*—that were an unnecessary presumption. But it would be well nigh impossible to discuss the value of subjective symptoms without alluding to some considerable extent to Hahnemann's conception of disease, as well as to his magnificent generalisation respecting the curative properties of medicines, which gave birth to the Homœopathic Materia Medica.

Regarding diseases, Hahnemann's contention was that they are nothing more than alterations in the state of health of the healthy individual, which express themselves by morbid signs : that these alterations are produced through the action of morbid agents on the hidden and inscrutable vital force everywhere present throughout the body, and that it is this morbidly affected vital force which alone produces diseases.

In his work on "The Evolution of Disease," Bland Sutton commences his task by at once admitting and exploring the lack of an adequate definition of disease. But the definition of disease as a condition of disordered vital force, though it would not answer the requirements of the standard Bland Sutton desiderates, to the extent of drawing a hard and fast boundary line betwixt health and disease uniformly applicable to all and sundry, seems to me, nevertheless, a sound as well as an all-comprehensive one. Indeed I go further ; I believe the statement is worthy to be ranked as a medical axiom and that it would be received as such, were the minds of men prepared to conceive the possibility of the existence of such a thing as a self-evident truth in anything relating to medicine.

Life cannot continue in the absence of vital force. The harmonious working of the vital force in all parts of the body is what constitutes life in the state of health. Any

interference in the operation of the vital force constitutes life in the state of disease, which is just another way of stating our definition of disease as a condition of disordered vitality.

This is Hahnemann's dynamic theory of disease, and it is no refutation of it to point out that we do not know, and possibly may never know, how it is that the vital force is disordered and how, when disordered, is capable of producing the symptoms it elicits. To discard the dynamic theory on any such grounds would be as logical as to doubt the existence of health and of life itself, because we do not know, though numerous theories have been hazarded to explain, what the vital force which animates us is, or how it keeps all the various organs in active and harmonious operation.

This conception of Hahnemann's was far in advance of the views held by his contemporaries. It involved the consideration of a something, acting over and above, but through the objective morbid symptoms to which alone their attention was directed. This dynamic element they refused to consider, and set themselves instead to determine the pathological changes which actually occurred in each case of disease. Very naturally, therefore, they came to look upon these changes as the alpha and the omega, the beginning and the ending, of disease.

This is the standpoint from which rationalists and empiricists, ever since Hahnemann's day, have approached the problem of disease; and in our own time the adherents of orthodox practice still hold the same view and follow out analogous methods of investigation and elucidation.

In this way a vast and ever-increasing store of very useful information regarding the morbid anatomy and natural history of disease has been accumulated. Whilst, however, making all due acknowledgment of the benefits derived from the very careful and, in many instances, very strenuous labour expended by many notable investigators into the diseased state, nothing, I consider, has yet come to light which invalidates Hahnemann's dynamic theory; nor has any rival hypothesis, worthy to compete with it, so far been evolved.

As a matter of fact, the review of the history of orthodox medicine during the past hundred years forms no very pleasant and flattering reading for its adherents; for the very discoveries made, however valuable, were in themselves, necessarily, sources of weakness and confusion, inasmuch as each discovery, along with the treatment necessarily associated with it, was liable to complete and ignominious extinction as fresh light on pathological conditions, derived by the aid of better means of examination and of research, was acquired. In this way, and owing, as I believe, to this blind adherence to mere pathological data appreciable to the senses, the rationalists are as far off as ever from possessing the unifying element, in the shape of a principle which alone can bring order out of the multiplicity of diseases and systems, and substitute a firm and sure basis for the progressive development alike of the knowledge and of the treatment of the diseased condition.

It may be asked why, if the value of Hahnemann's dynamic theory of disease is so great, it has so long been tacitly neglected, when not openly scoffed at, by medical men? I think the explanation is easy and in this wise: that as a principle it is of practically no avail if adopted apart from the collateral fundamentals of homœopathy; without the aid of drug-provings, which elicit the true action of drugs on this dynamic force, and of the law *similia similibus curentur*, which forms the connecting link between the two series of phenomena. Divorced from these necessary adjuncts, the dynamic theory of disease is absolutely worthless. It then becomes only a learned way of cloaking one's ignorance and a mere platitude, in comparison with which the elucidation of the material morbid changes found in disease is a more honest as well as a more satisfying pursuit.

But, personally, I do not despair that, in course of time, men will be driven by the force of accumulated evidence to the acceptance of Hahnemann's dynamic theory. It is indeed noticeable that many of the leading men have already, to some extent, wakened up to a sense of the crudity of the views which inspire the rational medicine of to-day. For

instance, they are beginning to realise that the terms so commonly used by them to indicate diseases are mere abstractions, representing ideas present in their own minds, though often very inadequately represented in the patient's actual condition. Such at least is the interpretation which I put on the following remarks which Dr. Clifford Allbutt, the editor of the "Cambridge System of Medicine," made in the course of an inaugural address delivered before the students of Middlesex Hospital in October of this year. I quote *verbatim* from the abstract of the lecture given in the *British Medical Journal*, October 6, 1900:—

"In turning to the present state of medicine, the speaker found in it a wholesome tendency to the fall of diseases, as abstract names, and to the rise of the patient. In like manner, principles of causation and therapeutics are happily falling out of fashion, and cautious—he might say 'opportunist'—use of facts and tentative methods are taking their place. The iatro-mechanical principles of medicine were followed by the iatro-chemical, by doctrines of stimulants and antiphlogistics, of irritability, and so forth. Even in our own day we had witnessed the vogue of such a general principle in *similia similibus curentur*. He trusted that with this healthy reform of method physicians would become even still more careful in reasoning in abstract terms. In congratulating modern physicians on the fall of disease and the rise of the patient, he congratulated them on the growing perception that there is no such thing as, say, 'enteric fever' or 'diphtheria'; these are not things, but abstract conceptions—the realities being large numbers of individual patients, no two of whom are alike, and many of whom are very unlike; so that in speaking of the causes of enteric fever, for example, we are tempted to forget that we speak of the causation of an abstraction; and to formulate abstract *i.e.*, more or less negative causes. The remedy for this easy vice is reiterated and indefatigable reference of every abstract term to its supposed content of facts and of principles and names of diseases and patients. Thus each case will be treated, not according to catalogued routine, but *according to its own needs*."

Dr. Allbutt ends up his paper thus :—“ Mere observation of disease and of morbid anatomy have taken us almost as far as these means can do. We are learning that to keep a patient alive for a year or two, who is already, in some part at least, half dead, is but a poor achievement. We must track our morbid *processes* in their earliest dynamic initiation, so as to arrest them at these stages.”

Dr. Allbutt may, if he likes, scoff at the law *similia similibus curentur* as a general principle of treatment, but at any rate he endorses two most important homœopathic tenets when he insists on (1) the individualising of diseases, and (2) the importance of morbid processes (not results) in their dynamic initiation.

In dealing with the question of what is curative in medicine, Hahnemann's innovations were no less disconcerting to the orthodox medicine of his time. He stipulated that only by experiment on the healthy individual could the true action of a drug be found out. Even upon *à priori* grounds this proposition should have commended itself at once, had the issue not been obscured by admixture with the further proposition of *similia similibus curentur*. Setting aside, therefore, any consideration of the after uses to which a drug has to be put, I think it is incontrovertible that the knowledge of that drug, derived from its action on a healthy man, is bound to be truer and more reliable than any deduction which can be drawn from the exhibition of the same drug upon man in a diseased state, where you have three practically unknown agencies contending for the mastery, viz., the natural disease, the limits of which it is impossible to define; the recuperative action of the vital force, or, as it is usually and felicitously termed, the *vis medicatrix naturæ*; and, lastly, the drug-action.

The case needs only to be cited to gain the unqualified approval of the staunchest empiricist, and in addressing homœopaths the mere mention, were it not allowable for the sake of completeness, would merit an apology. But whilst present-day pharmacologists might be inclined to agree, and as a matter of fact many of them do actually prosecute their enquiries into the action of drugs along

those lines, this objection might be raised to the method, that it of necessity affords only a partial and incomplete picture of the drug disease, seeing that drugs can be proved only up to a certain point—the farthest point being short of poisoning and generally much short of that, seeing that few people are likely to be found who are willing to make martyrs of themselves *pro bono publico*.

The deficiency is, of course, supplied to a certain extent from the records of the involuntary provings which toxicology affords. But even though we had no such proof to fall back upon, I am by no means persuaded that to elicit the curative action of a drug a lethal dose need be given. Even on antipathic grounds I cannot see that such a contention can be substantiated.

Admitting now the soundness of Hahnemann's propositions regarding both diseases and medicines, on the truth of which, no less than on the law *similia similibus curentur*, depends the whole fabric of homœopathy, what light do they afford us as to the legitimate and proper sphere of subjective symptoms in the treatment of disease?

Subjective symptoms, as ordinarily defined in the text-books, are those manifestations of disease which are appreciable only by the patient, the existence of which it is therefore impossible for the examining physician to affirm or deny. I wish to modify this definition by enlarging its borders so as to include all mental and moral symptoms of disease. These symptoms cannot be said to be invariably included in the ordinary definition of subjective symptoms, as in very many cases the changes wrought by disease within the secret recesses of a man's nature, in his temper, in his habits, and in his volitional and intellectual integrity, are only too palpably visible to the physician. Yet I am warranted in including them in this paper, if for no other reason than the fact that, however apparent they may come to be in the later stages, they are almost invariably preceded during an earlier or prodromal stage by pathological experiences which are confined to the inner consciousness of the patient.

Apart, however, from the consideration of this class of

symptoms in cases of insanity, mental and moral symptoms of disease deserve inclusion here because they are present in greater or lesser degree in all cases of disease.

Before entering on the consideration of mental and moral symptoms of diseases and of drugs, it is necessary to define our position in regard to the vexed question of the relationship betwixt mind and brain. The consideration of this problem from a practical as distinguished from the ethical or metaphysical standpoint impels one to a belief in an organic physical relationship betwixt the brain of man and his mental and moral qualities. The evidence in favour of this hypothesis is in the main derived from two sources—on the one hand, from our knowledge of pathology which demonstrates the physical malformations and changes in the brain which are associated with disordered mental and moral faculties, and on the other hand, from the knowledge derived from the study of the evolution of the human mind.

With this view, "we must consider," to quote from the article on "Insanity," vol. 5, "Encyclopædia Medica," "our brain stuff as not only the vehicle of all that is forthcoming in human character, but also as preserving more or less active rudiments corresponding to the unrecognised memories of all animal and ancestral experience. The human mind is at once the master and servant of an organ of whose potencies the sane and orderly person realises only a very small fraction, but an organ which, in dissolution, reveals an infinite store of atavistic associations." This condensation and epitome in the civilised brain of the various evolutionary phases through which mind has been evolved receives much confirmation in insanity, as in many instances the patient lapses as regards his mental and moral faculties into conditions characteristic of various stages in the psychical development of the race.

Maudsley, in his work on "The Physiology of Mind," also aptly sums up this coordinate relationship of brain and mind, when he says:—"The highest emotional feeling to which mankind has yet attained is the moral feeling or sense. The internal organic adaptations which have taken place in correspondence with external social existence have

been propagated through generations ; and that which was a gradual acquisition of the ancestors has become, more or less, an innate endowment of the offspring." So that, in the end, as we now find it, "the larger, more numerous, and complex cerebral convolutions which distinguish the brain of a civilised person from that of a savage, correspond with the capacities of the exalted ideas of justice, virtue, mercy, and love, which the savage has not and cannot have."

My first proposition is that medicines by virtue of their inherent properties are capable of so affecting man as to produce derangements in his intellectual, moral, and emotional functions as well as in the workings of his sensori-motor activities. The records of any large asylum bear ample evidence in favour of this proposition, as quite a number of the inmates are there through the ill-effects produced by the abuse of drugs.

Further, in ordinary everyday practice, we are constantly meeting with patients whose sufferings are more or less attributable to the prolonged use of drugs ; for instance, we may cite the condition, amounting in some cases to the most abject and pitiable mental torpor, to which many patients who have been subjected to a long course of bromides are brought, not so much owing to the encroachments of the disease as to the depressing action of the drug used to suppress it. In like manner experience has taught the old school practitioners to be wary of prescribing indiscriminately other drugs, *e.g.*, opium, cannabis indica, and more particularly in recent times, cocaine. Even in literature and in fiction this property of drugs has been championed, notably in Dr. Quincey's autobiographical "Confessions," and in the realm of fiction in a remarkably powerful but little known work of the late Robert Louis Stevenson entitled "The Strange Case of Dr. Jekyll and Mr. Hyde."

These instances culled from allopathic and general sources are only adduced as showing that the action of drugs upon mental and moral processes is being slowly recognised and appreciated by orthodox practitioners. With the

acceptance of Hahnemann's principle of drug proving, that which they allow as true in isolated instances we know to be true of all drugs, so that we have in our homœopathic *materia medica* a rich store of mental and moral as well as of the sensori-motor symptoms.

To discuss the mental and moral aspect of disease one would require the experience of an alienist, which the attendance of a three months' course on insanity by no means warrants me assuming. But though I cannot go into this part of the subject, I venture to think, in accordance with my belief in the general principles of homœopathy, that the key to the successful treatment of this branch of medicine lies in the further elucidation of the mental and moral symptomatology of drugs, so as to be able to forestall and, if possible, prevent, the actual incidence of the diseased condition.

Innumerable instances of minor disorders of mental and moral functions are to be met with in our own everyday practice, a few instances of which may be cited. We are all of us familiar with the type of patient, whose latter end only too frequently is that of religious melancholy, in whom the morbid introspection due to the action of an extravagant conscience leads to intense mental disquietude, and causes him to magnify the most trifling delinquencies into the most heinous sins. Other patients, the so-called hypochondriacs, in many of whom the most detailed physical examination fails to reveal any morbid bodily changes, present equally distinct mental disturbances, being characteristically despondent, irritable, and morbidly self-centred. To them life presents no rosy hues, but rather one prolonged sombre shade, varying in density from reasons unknown, though instinctively and often erroneously referred to various peripheral organs.

In hysteria, again, the mental and moral symptoms met with are so numerous and so variable as to baffle description. In it the morbid process seems, so to speak, to run riot through all the higher functions of the brain, producing in some exaltation and in others depression. Instances of the perversion of the natural affective faculties, of the

development of abnormal instincts and habits, and of aberrations of memory in greater or lesser degree—might be cited from this one class of patients alone. But space forbids. I do not hesitate, however, to affirm of these and similar subjective symptoms my firm belief, not only in their reality, but also in their reliability as indications for treatment.

This brings me to the consideration of the last part of my subject, viz., the relative value to be assigned to this class of symptoms. From an allopathic standpoint such symptoms are, to all intents and purposes, worthless. As Professor Bock says, in his book on Diagnosis: "Only the objective symptoms—of which the practitioner derives a knowledge by the use of his own senses, of sight, touch, hearing, mensuration, percussion, and by microscopic and chemical examination—are of any value. The subjective phenomena are in the highest degree uncertain and treacherous."

Such an estimate is logically in accordance with the allopathic view as to the nature of disease. But that view is, as I have attempted to show, an insufficient one. It is what I may term a fore-shortened view, owing to the exclusive attention paid to the material morbid changes and the complete neglect of the vital force and its methods of producing these changes. Carroll Dunham, in his work on "The Science of Therapeutics," demonstrates the fallacy of this position when he says: "Now, just as any spot upon the surface of the globe may be approached by an almost infinite number of roads, and yet, when the traveller has reached the spot, there shall be nothing in the mere fact of his presence there to indicate with certainty the road by which he has come thither; so the same pathologico-anatomical result may issue from the most multifarious pathological processes, which processes, however, leave no sign in the result. If, then, the mode of treatment be based on the result, it can take no account of this variety of processes. Subjective symptoms enable us to take cognizance of the pathological processes; hence the value of these symptoms."

On the other hand, a knowledge of pathology when not subverted as a means to treatment is essential for the proper and intelligent practice of medicine. Without that knowledge, diagnosis and a rational prognosis would be impossible; we should be reduced to the ranks of, as we are often sarcastically described, mere symptom-coverers.

Moreover, as Hahnemann taught, it is all the symptoms of disease which constitute the disease, and not merely the objective nor yet the subjective series. Therefore we value just as highly as our old-school friends—though for very different reasons—the legacy of knowledge of pathology bequeathed to us. Whilst, however, acknowledging gratefully our indebtedness in this department to our allopathic *confères*, they in their turn would receive as much—to my mind, even more—benefit from the help which subjective symptoms afford us in the individualising of disease. The extract already quoted from Dr. Clifford Allbutt's address shows that the pioneers in the allopathic school are beginning to realise the need for this individualising of disease. Another sign of the times is to be seen in the publication of Professor Amory Hare's work, entitled "Practical Diagnosis; or, The Use of Symptoms in the Diagnosis of Disease."

On the score of material prosperity in practice I venture to think that a higher estimate of the value of subjective symptoms is called for. Patients in the recital of their ailments naturally emphasise those various subjective symptoms which are often, to them, the only appreciable evidences of departure from the state of health. The physician, therefore, who lightly treats those symptoms runs the risk of destroying his patient's confidence in him, and in this way militates against the chances of successful treatment.

Apart from any such consideration, I claim in accordance with the principles of a sound homœopathic philosophy that subjective symptoms deserve a full and adequate share in both the examination and the treatment of disease, and further, as regards their individual value, that this increases in direct proportion to the importance of the mental and moral faculty which is involved.

SOCIETY NEWS.

At the Meeting in December, William Warren, M.R.C.P.I., L.R.C.S.I., L.M., of 85, Lordship Park, Stoke Newington, and Collins Street, Melbourne, was elected a Member of the Society.

At the Meeting of the Liverpool Branch in December, Sidney Morgan Whitaker, M.D.Brux., M.R.C.S., L.R.C.P.Lond., of Liverpool, was elected a Member of the Society.

LIVERPOOL BRANCH.

The opening Meeting of the Session was held on October 11th, in the Hahnemann Hospital, when the report for the Session 1899-1900 was read and adopted, which is inserted below.

The Presidential Address on "Landmarks in the History of Electricity" was given by Dr. Gordon Smith. Beginning at the time of its earliest inception Dr. Smith described in a graphic and concise manner the principal discoveries which have led, step by step, to the appreciation and applications—such as we now enjoy—of this most powerful and universal of the forces of Nature. The paper was listened to with much interest, and at the conclusion, the thanks of the Society, voiced by Drs. Hayward and Moir, were accorded to the President.

REPORT OF THE LIVERPOOL BRANCH OF THE BRITISH HOMŒOPATHIC SOCIETY FOR THE SESSION, 1899-1900.

The customary eight meetings were held in the course of the Session, and the following six papers were read :

(1) October 12, 1899.—Presidential address, "The viability of children and their feeding during first twelve months," Dr. Moir.

(2) November 9, 1899.—"The artificial feeding of infants," Dr. Chas. Hayward.

(3) January 11, 1900.—"The eye in relation to general disease," Dr. Lucas Hughes.

(4) February 8, 1900.—"The reliability of experience in the medical art," Dr. Simpson.

(5) March 8, 1900.—"The use and abuse of aperients," Dr. Cox.

(6) April 12, 1900.—"The new therapy in relation to tetanus, plague and diphtheria," Dr. Arnold.

The number of members of the Branch is thirty-one as compared with thirty-two at the corresponding date last year, three members having resigned during the year, whilst two new members, viz., Dr. G. Reginald Jones and Dr. E. Lucas Hughes have joined the Society.

At the meeting held on *November 8, 1900*, the following paper was read: "The Absorbent System as an Aid in Diagnosis," by Alfred Johnson, M.R.C.S., L.R.C.P.Lond.¹

In the introductory part of his paper Dr. Johnson discussed at length the anatomical distribution of the lymphatic vessels and glands throughout the body, particular attention being given to those of the extremities, head and neck, and abdomen.

The physiological part played by the lymphatic system in excretion, and in the case of the lacteals, in absorption, was next reviewed, and in this connection the analysis of lymph and of chyle was given. The phagocytic action of the lymph glands on bacilli and their products was also commented upon.

Dr. Johnson discussed the pathology of the lymphatic system, and in doing so adhered to the "regional" method, adopted in the previous part of the paper. He confined his attention principally to the consideration of inflammatory affections, simple, tubercular and specific, originating in local lesions. Neoplastic changes and conditions of a general systemic type, such as lymphadenoma, were not included.

Illustrative cases referring to the various regions were cited, some of which cases showed in a striking manner the benefits accruing from properly applied surgical measures.

In dealing with the thorax Dr. Johnson pointed out the importance of examining the condition of the bronchial glands, and demonstrated the method of determining when these are enlarged. He showed that by auscultation over the region of the second right chondro-sternal junction, with the patient's head over-extended, a venous hum could always be heard whenever the bronchial glands were enlarged, which murmur disappears on flexing the patient's head. The value of this physical sign as an early diagnostic of disease was strongly insisted upon.

Referring to simple inflammatory parotitis, Dr. Johnson expressed the opinion that the site of the primary initiation in many such cases was to be found in the nasal fossæ, and that this fact was apt to be overlooked by us.

¹ For the epitome of Dr. Johnson's paper we are indebted to Dr. James Watson, secretary of the Liverpool Branch.—Eds.

Attention was also drawn to the value of the yeast nuclein and nucleic acid in raising the resistance of the absorbent system to toxic invasion.

In the discussion which followed, Dr. Hayward referred particularly to the part played by the lymphatic glands in plague, and the great importance of early diagnosis of the condition, by means of the glandular affection.

Dr. Cash Reed said he had been reminded, during the reading of the paper, of the case recounted by Hilton in his classic work on "Rest and Pain," in which case very intractable earache was successfully treated by attending to a ragged tooth, which had set up a lingual ulcer. Dr. Johnson had referred to the lymphatic communications which exist between structures on either side of the diaphragm, which were the channels by means of which septic conditions spread from one cavity to the other. He (Dr. Reed) had noticed this occur on several occasions, of which the most pronounced instance was the following:—Patient, a young man who had had several severe attacks of appendicitis, was induced, after a most critical one, to submit to operation. At the operation the appendix and neighbouring structures were found to be so densely matted together that nothing could be done to remove the disease; and a prognosis in accordance with this condition was arrived at. A few days after the operation, the patient developed a smart attack of right-sided pleurisy, from which he recovered. The interesting feature in the case was that the abdominal trouble has never since recurred; to all appearances, he is fully restored to health.

In regard to enlarged pelvic glands, Dr. Reed pointed out that, in cases where the cervix was the site of primary malignant growth, the glands affected were situated in the utero-sacral ligaments; whereas, in cases where the body of the uterus was primarily affected, the glands, enlarged, were to be found along the outer margin of the broad ligament. These facts were important elements for consideration both in regard to diagnosis and to treatment, more especially in deciding for or against operation.

Dr. Hawkes gave an account of a case which was recently under treatment in hospital, in which the general features all favoured the diagnosis of plague. There were present a general septic condition, septic pneumonia—of exceedingly rapid onset—and sores and abscesses on various parts of the body, but none of the glandular enlargement of true plague. At the *post-mortem*, the soft palate and structures lying in the region of the right parotid gland were found sloughed and gangrenous.

Dr. Simpson spoke on the therapeutics of enlarged glands, affirming his strong faith in medicines, and giving illustrative cases. The drugs he especially recommended were: (1) Calc. carb., where the strumous diathesis was well marked; (2) baryta carb. in non-strumous cases; and (3) sulph., which he used chiefly to clear up the hard remains which often resulted from acute glandular affections.

The discussion was also taken part in by Drs. Murray Moore, Meek, Green, Drury, Watson, and the President.

At the above-named meeting Dr. Cash Reed—formerly of Plymouth, now of Liverpool—was elected a member of the Branch.

SUMMARY OF PHARMACODYNAMICS AND
THERAPEUTICS.

“GATHER UP THE FRAGMENTS, THAT NOTHING BE LOST.”

SEPTEMBER—NOVEMBER, 1900.

PHARMACODYNAMICS.

Acidum muriaticum.—There is extracted in *L'Art Médical* for August a case in which a poisoning by swallowing hydrochloric acid precisely simulated diphtheria, even to a return after convalescence with “passing paretic troubles of the velum palati.”—*L'Art Médical*, August, p. 143.

Acidum picricum.—After relating two illustrative cases, Dr. Gurnee Fellowes writes: “I do not believe that ferrum picricum will cure all cases; but ferrum pic., calc. picrata and picric acid have done more for me in the course of years than any other remedies for external inflammation of the ear, and particularly for blind boils and abscesses of the meatus.”—*The Clinique*, September, p. 471.

Apis.—A veterinarian states that an extract of the poison of the honey-bee, given in drachm doses, will cause in mares and bitches metrorrhagia, abortion if pregnancy exist, and subsequent barrenness.—*Amer. Homœopathist*, October 1, p. 300.

Apocynum.—Dr. Hansen reports a case in which a tumour in the abdomen, apparently an ovarian cyst, disappeared under the use of apocynum ϕ in increasing doses.—*Hom. World*, July, p. 308.

Arsenic.—A man, aged 42, who had been taking for psoriasis 5 to 8 minims of Fowler's solution three times a day, on and off for ten years, came under observation. His illness began about eight months previously with a “cold” and cough. About a month later his abdomen began to swell, and at the end of each

day's work he noticed that his legs were swollen. The skin of almost the whole body was of a mottled yellowish-brown colour, small rounded areas of less pigmented skin alternating with more deeply coloured parts. The face was slightly affected, and the complexion was muddy. The hands and feet were not discoloured; but on the palms the skin was diffusely thickened, and here, as well as between the fingers, were numerous dirty-gray warts and callosities, varying in size from that of a pin's head to that of a pea. The soles were similarly affected. The abdomen was distended with fluid and the skin pitted on pressure.—*Calcutta Journ. of Medicine*, July, p. 282.

Dr. W. Warfvinge, of Stockholm, in twenty years of hospital practice has seen fifty-three cases of pernicious anæmia. He asserts that we have in arsenic a specific remedy for the disease. In all cases where it was methodically used a turn for the better was noticed; and though sixteen of the patients died, after one or more recurrences of various complications, the remainder continued well as far as they could be followed.—*Hahn. Monthly*, November, p. 723.

Dr. Leach, in the *Minneapolis Homœopathic Magazine* for November, repeats his arguments in favour of arsenization as prophylactic of cholera, yellow fever, and plague; and Dr. Edward S. Smith, in the *Homœopathic Recorder* of the same month, confirms by his own experience our Dr. J. H. Clarke's recommendation of it as playing the same part in influenza.

A lady, aged 53, fell ill of boils in 1874. The boils healed very slowly, and at last a carbuncle formed on the right knee; the patient grew very thin, complained of weakness, thirst, frequent and copious micturition. Repeated analysis showed from 80 to 100 grms. sugar daily. Arsenic 3x, three times a day, was prescribed, without alteration of the diet. Under this treatment the carbuncle healed quickly; the subjective symptoms disappeared, and the glycosuria diminished. For two years analysis showed sugar, but in ever diminishing quantity. Arsenic was continued all the time. When at the end of this period the glycosuria had disappeared, the remedy was continued occasionally with longer intervals and for a year after the sugar had ceased. The diet was never altered. Two years ago the patient died, twenty-two years after the cure, and the sugar never returned, even when she took large quantities of sugar.—*ELB, A. h. Z.*, cxli., p. 100.

Baptisia leucantha.—Our indefatigable adherent, Mr. Frederick Kopp, of New South Wales, has added a proving of this "white-flowered member of the wild indigo tribe" to his other drug experiments. Its action on the bowels was quite of a dysenteric character.—*Hom. World*, September.

Barium.—Dr. T. G. Stonham contributes a study of barium and its salts to the *Monthly Homœopathic Review* of November, and relates therein a proving on himself of the chloride, of which he took two grains daily in four ounces of distilled water. After ten days he "found an increase of 23 per cent. of uric acid excreted, whilst taking the drug, compared with that excreted during the ten days preceding." There was also an increase in numbers of the white corpuscles of the blood.

Calcarea carbonica.—The curiously beneficial effects of calcarea 30 in hepatic colic have been vouched for by more than one observer in this country. Dr. Sands Mills came forward at the Paris Congress with testimony to its equally good effects, as high as the 200th, in "colique néphrétique." He relates five illustrative cases.—*L'Art Médical*, September.

Cardiac remedies.—Dr. Arnulphy communicated to the late International Congress his experience gained at the Hahnemann Hospital, Chicago, with naja and cratægus in cardiac disease. The former he considers the great remedy for endocarditis, not only in its chronic form, which we call valvular disease, but also in the acute stage. He uses most frequently the 6th trit. Cratægus has no action on the lining membrane of the heart, but renders the greatest service when the myocardium itself is affected. It subdues its inflammation and tones its weakness. Here he gives, like others, five-drop doses of the mother tincture.—*Ibid.*, August.

Cocaine.—An apothecary in the West Indies experimented upon himself with cocaine. Its primary effects (5 to 10 grs.) were exhilarating and energising, but then "I felt haunted, restless, morose, quarrelsome; I had hallucinations of being persecuted and of impending evil; my heart would be pounding at a fearful rate, so that I could hear its throbbing; the eyes got glassy, with a fixed, staring look; the tongue was heavy and unable to move at will; a terrible and incessant hacking cough shook the frame; the mind was obfuscated; there was anorexia, insomnia, and an insatiable craving for alcoholic stimulants,

which, when taken, had but slight intoxicating effect."—*Amer. Homœopathist*, October 1, p. 299.

Colocynth.—A case of colocynth poisoning is extracted in the *American Homœopathist* of September 15, which had the peculiar feature of bloody discharge from bowels, uterus, kidneys, and bladder.

Conium.—A railway engineer, aged 78, came to Dr. McIntyer for treatment of paresis of the neck of the bladder, from which he had suffered for six years. Tracing the trouble to the long-continued jolting of the locomotive, and learning that there was some pain in the lumbar spine, Dr. McIntyer gave him conium 3x. From occasional weekly courses of this remedy improvement soon set in, and eventuated in about five months in a complete cure.—*Hom. Recorder*, September.

Cratægus.—Further cases illustrative of the virtues of this drug are related by Dr. Halbert in the *Clinique*, and Dr. Reily in the *Homœopathic Recorder* of October. To establish compensation in cases of valvular insufficiency in the heart seems to be its effect.

Granatum.—Dr. Colby calls attention to the marked vertigo experienced by those who have taken pomegranate root for the expulsion of tæniæ, and says that he has come to regard granatum as quite the leading remedy for vertigo when occurring as the substantive symptom of a case.—*N. Engl. Med. Gazette*, November.

Guaiacum.—One of the few uses to which this drug has been put is in the treatment of tonsillitis. The practice originated in the old school; but Dr. Ozanam confirmed it from our own ranks at the Basle Congress of 1886, and Dr. C. H. Evans bears the same testimony in *The Clinique* of September (p. 478). He finds it especially useful to check the tendency to recurrence. He gives fractional doses of the mother-tincture.

Gymnocladus.—"The torturing headaches that occur during and following 'influenza' gently and permanently disappear under the influence of a proven remedy having some peculiar and unusual symptom corresponding with a feature of this disease. Notably is this true of cases having an intense throbbing headache in forehead and temples, with desire to lean the head on something; the pain so intense as to render the patient indifferent and forgetful; tongue coated bluish-white. This last

symptom finds a *simillimum* only in the proving of *gymnocladus canadensis*, and, given in the third potency, it quickly relieved many cases where the most heroic measures had utterly failed."—Millie J. Chapman, M.D., *N. Amer. Journ. of Hom.*, October.

Iberis.—Dr. Proctor comes forward in the *Homœopathic World* of November to verify the provings of *iberis*. He has found it very useful, in himself and in other subjects, for the weak and irregular heart's action which is liable to follow influenza.

Iodium.—In *L'Art Médical* for November, Dr. Marc Jousset gives an interesting account of a study of iodism by Dr. Gaston Lyon. The drug's action on the skin is that specially studied. Its eruptions are most frequently acneiform, but those lying outside this category present an almost endless variety.

Kali phosphoricum.—The action of kali phos. on the nervous system is being utilised by our alienists. Dr. W. E. Taylor, of the Western Asylum for the Insane, U.S.A., finds it of great value where the patient has been "acting queer" for a long time; when the brain has been gradually growing weaker, causing loss of memory, lack of interest in everything, carelessness in business, jealousies, suspicions, and more or less insomnia. This condition may result from domestic troubles, or any cause which exhausts the nervous energy.—*The Clinique*, September, p. 475.

In the same journal (p. 501), Dr. C. H. Evans testifies to the usefulness of the drug in lingering cases of typhoid, where the energy does not return, fever smoulders and flickers, and nervous symptoms recur. It is especially indicated where the patient has been a mental rather than a physical worker.

Lycopersicum esculentum.—Dr. H. A. Roberts has observed that persons who eat the fruit of this solanacea get frequent urination and a profuse watery diarrhoea, also that it is in popular repute as prophylactic and curative of rheumatism. He has proved it on himself in the 3x and 30x potencies, and reports the results in schema-form. "Rheumatic symptoms were the first to develop in all the provings, and the first to disappear. A congestive period followed almost immediately; then nervous symptoms were manifest. A cough was the most persistent symptom of the two 3x provings, lasting for nearly a month after each." Some cases appended seem to show it very effective in the rheumatoid aching of influenza and tonsillitis.—*N. Amer. Journ. of Hom.*, October.

Mercury.—A case of poisoning from inunction of mercurial ointment is recorded in the *Hahnemannian Monthly* for November (p. 735), in which, after gastro-intestinal disorder, a general neuritis of the limbs set in, followed by pigmentation of the skin and falling of the hair.

Morphia.—Another¹ testimony to the sufficiency of minute doses of morphia is borne by Dr. J. N. Love. After condemning the ordinary hypodermic injection, he writes: "If morphine be absolutely necessary, the physician should dissolve a fourth of a grain in a half-glass of water, and give a teaspoonful every ten minutes until relieved. I have frequently in this way secured relief to agonising pain by the use of an almost infinitesimal amount of the drug."—*N. Amer. Jour. of Hom.*, November, p. 719.

Mullein Oil.—Dr. Cushing writes: "For a long time I recommended taking the mullein blossoms, putting them in a bottle, corking it and placing it in the sun. Now I can, and will, give a better way which I have thoroughly tested. It is very much quicker, therefore much cheaper and easier. At first trial I took the whole head, buds and blossoms, shaved them from the stalk, pounded them in a mortar, then put them in the bottle. At the suggestion of a lady I ran them through a clothes wringer, whose rolls were near enough to crack the buds, when it is but little work to shave them from the stalk—little work and resultant in a fine article. The next question is how to keep the mixture. Cork the bottle, and let it remain head down till the oil is wanted for use. It will keep that way one or two years without the addition of alcohol or any other preservative substance."—*Med. Century*, September.

Natrum muriaticum.—Mr. Charles Spencer, wishing to test the powers ascribed by Dr. Burnett to natrum muriaticum 6, proved such a dilution of table-salt on his own person in increasing doses, and succeeded in developing a very decided illness, even the skin and nails becoming altered.—*Hom. World*, September.

Phosphorus.—A stout, well-nourished lad of 11 was always soiling his drawers with fæces. His father had punished him, thinking it was carelessness. There had been no loose bowels or any sickness in his case for several years. This condition dated back some six months. On examination, when I pulled the

¹ See vol. iv., p. 495.

buttocks apart, I found what looked like a tube cut off, being able to see into the rectum. The anus stood open, and there was no power of voluntary contraction. No subjective symptoms could be elicited. Phosphorus 4th to 30th brought this condition to a close in about six weeks, and it has not returned so far.—Chandler, *Hom. Recorder*, September.

Levai, of Buda-Pesth, from thirty cases of phosphorus necrosis, comes to the conclusion that it is not the result of local absorption, but of profound blood-change.—*Monthly Hom. Review*, November, p. 686.

Phytolacca.—Dr. Sands Mills has an interesting article on this drug in the November number of the *North American Journal of Homœopathy*. Besides its ordinary use, he praises it in acute tonsillitis and in chronic enlargement of these glands with intercurrent acute attacks. He gives the 1st to 3rd dil.

Quinine.—Dr. Jousset continues to rely upon quinine in preference to the usual homœopathic remedies in acute rheumatism. He relates in the September number of *L'Art Médical* an illustrative case, showing its comparative value.

In the same journal are cited the remarkable results obtained in cancer by M. Jaboulay from this drug, which he injects subcutaneously in the dose of $\frac{1}{2}$ to 1 gramme *per diem*. His view is that the disease is due to an animal parasite, like that of malaria.

Sabal serrulata.—Dr. Irving Thayer confirms Mr. Dudley Wright's experience that the preparation of this drug made from the fresh berries—as that of Parke, Davis & Co.—is the only one that can be depended on in the treatment of enlarged prostate.—*Amer. Homœopathist*, October, p. 307.

Secale.—Dr. Ghose continues to find secale very effective in diabetes (see p. 255 of vol. viii.). He gives, in the *North American Journal of Homœopathy* for October, notes of seven well-marked cases, all in natives, which seem to have recovered under it. He uses the 6th dil.

Sticta.—Dr. Dewey contributed to the late International Congress a new pathogenesis of sticta, made by himself on students of the Homœopathic Department of the University of Michigan. Eight of these took part in the experiments, of whom three had the spasmodic cough for which the remedy has been accredited, and one the sensation in his head a former user of the

drug had felt in her left leg, as if the part were flying through the air.—*L'Art Médical*, August.

Strophanthus.—Dr. Royal, from a study of strophanthus, concludes that its place as a cardiac tonic is in cases where the heart has been weakened by alcohol, tea, or tobacco, or stiffened by rheumatism. He finds fractions of a drop of the tincture produce sure as well as safe results.—*N. Am. Journ. of Hom.*, November.

THERAPEUTICS.

Anæmia infantum pseudo-leucæmica.—Dr. E. R. Johnson, encountering a case where blood examination disclosed this rare affection, so constantly fatal, treated it with ferrum picricum 2x, five grains *per diem*, and was rewarded by complete recovery.—*N. Engl. Med. Gazette*, November.

Aortitis.—Dr. Jousset relates a case of the chronic form of this disease, in which the dyspnœa from which the patient suffered was greatly abated under the influence of sparteine (the alkaloid of scoparius).—*L'Art Médical*, September, p. 171.

Cancer.—Dr. van der Laan, of Porto Alegre, Brazil, whom some of us will remember as present at the Paris Congress, communicates some interesting cases to the *Revue homœopathique française* of November, among which we would note one of mammary tumours which, both from their clinical features and from the antecedents of the patient, appeared to have been cancerous. The persistent use of arsenicum and hydrastis internally, in medium dilutions, and of hydrastis lotion topically, effected a complete cure in less than five months.

Chloro-anæmia.—In the August and September numbers of *L'Art Médical* Dr. Jousset gives an interesting account of Dr. Hayem's conclusions as to the treatment of chlorosis. Instead of the *régime reconstituante* hitherto prescribed—flesh, wine, active exercise in the open air—he keeps his patients quiet in bed, and feeds them on milk, fish, and vegetables. Dr. Jousset entirely endorses this treatment; but instead of the protoxalate of iron given by his old-school colleague, he administers the ferrum redactum, triturated with saccharum lactis, giving about half a grain daily.

Epilepsy.—In the *Neurologische Centralblatt*, 14, 1900, Dr. P. Nacke gives with enthusiastic approval a *résumé* of the

method employed by Toulouse, of Paris. It consists mainly in what may be termed the desalination, or unsalting, of the body. Toulouse explains the improvement in cases of epilepsy put on a strict milk diet to the lessened amount of salt taken; but, as a continuance of a strict milk diet becomes intolerable, he allows his epileptic patients ordinary mixed diet prepared and served without the addition of salt. The effect of this method is immediate, the number of attacks decreasing in a remarkable degree, and in many cases a disappearance occurring within two weeks. Another feature of the method is that under it patients become very susceptible to the action of bromides, so that sixty grains of sodium bromide *pro die* have produced symptoms of intoxication. Toulouse combines the two together, *i.e.*, the unsalted food and small doses of bromide, preferably of sodium.—*N. Amer. Journ. of Hom.*, September.

Marburg records a case in which epileptic convulsions, preceded by tremor of hands and spasms, supervened on habitual eating of roasted coffee-beans.—*Med. Century*, October, p. 313.

Metrorrhagia.—Dr. A. K. Crawford, who has now migrated from Chicago to San Francisco, sends us from thence an interesting case of flooding lasting almost ninety days, in spite of all his efforts, local and constitutional, to stop it. After an interval it returned, and this time he at once administered one-grain powders of Armour's desiccated suprarenal capsules three times a day. The flooding diminished rapidly, and was arrested at the end of five days. A second recurrence (after a four weeks' cessation) yielded yet more rapidly.—*The Clinique*, November.

Opothotherapy.—By this name is designated in France the treatment of diseases by preparations of the organs affected, of which thyroid administration in myxœdema is the prerogative instance. Dr. Marc Jousset has a paper on the theory and practice of such medication in the July number of *L'Art Médical*, which is full of information.

Plague.—Dr. B. K. Baptist relates his experience with plague in Calcutta. In the epidemic of this year (1900), when no interference on the part of the Government took place, he treated twenty-six genuine cases with only four deaths—two of the latter dying within three and eight hours respectively of his undertaking the case. Lachesis 7 was his principal remedy, belladonna helping in the glandular swellings and the delirium.

"Almost all pneumonic cases I have cured by repeated doses of phosphorus alone; sometimes ant. tart. is required for profuse accumulation of mucus."—*Hom. World*, July.

Suprarenal therapy.—The "adrenals," whose function has long been so mysterious, have, in the course of the recent "opotherapy," been found to possess a singular power of contracting the blood-vessels, and so of reducing congestion and staying hæmorrhage. They exhibit this, of course, most actively when applied locally, but also to no slight extent from internal administration. A full account of the subject is extracted from the "Medical News" in the September number of the *Medical Era*. An extract of the glands is employed. It seems also to be a potent stimulant of the heart. (See also "Metrorrhagia.")

Uterine fibroids.—In the *Hahnemannian Monthly* of October, Dr. Wallace McGeorge has an interesting study of the drug-therapeutics of this disease. His remarks on lycopodium (when indicated by the general symptoms), viburnum opulus, terebinthina, secale, sabina, conium, sabal serrulata, ustilago, and other medicines, are very instructive; but, curiously enough, he makes no mention of calcarea iodata.

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*All communications and exchanges to be sent to DR. HUGHES,
Northfield, Albury, Guildford.*

SOME CLINICAL CASES.¹

BY A. E. HAWKES, M.D.BRUX., F.C.S.

Medical Officer to the Hahnemann Hospital, Liverpool.

MR. PRESIDENT AND GENTLEMEN,—I beg to detail the following three cases, and to show some specimens by way of illustration.

SARCOMA OF OVARY IN A CHILD.

E. C., a girl aged 10 years, was sent to me by a colleague, and entered the Hahnemann Hospital on June 18, 1889, with an obscure history.

The child was thin and anxious-looking, but no chest symptoms or signs could be discovered.

Her abdomen was swollen and tense, and on the right side there was a hard elastic tumour, extending from the symphysis pubis upwards and outwards to a level with the last ribs. The abdomen was tympanitic on either side, and percussion posteriorly

¹ Presented to the Section of Surgery and Gynæcology, January 3, 1901.

also gave a tympanitic note. The tumour was pyriform in shape, the apex being downwards. The patient passed about fifteen ounces of urine during twenty-four hours. Rightly or wrongly a hypodermic needle was passed into the tumour, and the fluid obtained, small in quantity, was not suggestive of a renal origin. In a few days the urine passed only amounted to ten ounces per diem. Malignancy was suspected, but it is fair to state that an actual diagnosis prior to operation was not made.

Enemata seemed rather to lead to a change in position of the tumour. The temperature being below 99°F., and the pulse below 100 per minute, the patient was duly prepared for abdominal section, which was performed on June 24 with antiseptic precautions. The incision was small, and it led to the exposure of a cyst, from which about twenty ounces of dark grumous fluid were abstracted by the usual method. Adhesions above and below were gently negotiated, and the tumour was lifted out of the abdomen, the pedicle being secured with silk.

It was noticed that the tumour was semi-solid, such portion being very similar to brain tissue, and some portion was more of a sebaceous character. The patient was exhausted somewhat, and the peritoneal cavity was not washed out, but great care was taken with the peritoneal toilet, and drainage was carried out. Arnica was administered, but there was much pain and restlessness, and twelve hours after the operation there was some vomiting as well as twitching of the hands. Coma vigil was observed. The catheter was needed, and eight ounces of urine withdrawn.

There was much pain and patient continued to be very sick. Weak brandy and water gave a little relief, and at the end of the first twenty-four hours a nutrient enema was administered. Then the pulse was 110, and the temperature 100°. Four hours after they were 120 and 101.2° respectively. Urine was passed involuntarily on one occasion, and the catheter had to be continued. There was hardly any discharge from the tube. Vomiting seemed to be allayed by the administration of arsen. 3, and on the evening of the second day no pain was complained of.

A little milk was allowed after thirty-six hours, and soon after Brand's essence.

Two days after operation the pulse was 114 and the temperature 99.4°. I need not continue the narration minutely. The persistent sickness was met by arsenicum 3 and nutrient enemata, the tympanitic condition was helped by terebinth 3 centes., and four days after the operation the bowels were moved, perhaps in consequence of the enemata.

The stitches were removed in due course, and on the sixth day the temperature varied from 99° F. to 100·4° F., and the pulse from 94 to 100, but soon the breathing became rapid, and dulness at the left apex was made out, and phosph. 3 was given.

On the eighth day patient took some fish and bread and milk; she slept better, and the bowels and bladder were evacuated naturally, and by July 4—tenth day—the temperature was 99° F. and the pulse 100 per minute, but the respirations were 30 per minute, and much evidence of pneumonia existed.

Some improvement took place, but soon the abdomen became distended again, until the cicatrix began to give way.

Ultimately, some five or six weeks after the operation, the child died, and at the *post-mortem* examination the abdomen was found to be full of fluid. Solid masses were adherent to the intestines and omentum, and another solid mass—felt during life—was found in the left iliac region. The pedicle was covered with lymph, and the intestines were matted together.

The lungs were a little congested, no true pneumonia remaining. On the right side there were many old pleuritic adhesions. There was no sign of tubercle.

So ended my first ovariectomy, but I neither regretted having satisfied myself as to the condition I had to deal with, nor having attempted to remove it.

In this connection I exhibit similar masses removed from an adult patient, and also, for the purposes of diagnosis, a kidney the subject of malignant disease, removed with difficulty even *post mortem*. The bowel passing in front is well seen.

I must appeal to my pathological friends to state, if they can do so from the slides, what degree of malignancy is to be ascribed to the tumour.

I exhibit, as a contrast to this malignant condition, a more or less solid tumour; the amount of fluid was small. The adhesions were not numerous, and the patient made an uneventful recovery. Microscopically, the tumour was a simple fibroma, but the lady, whose age was 62, died, I think, within a year of the operation. Her medical attendant, who assisted me at the operation, could not get a *post mortem*, but he thought death was due to malignant disease.

EMPHYEMA DURING PREGNANCY.

M. E. C., aged 30 years, a married woman with several children, was admitted into the Hahnemann hospital with many of the symptoms of pneumonia, on December 29, 1897. The brief note on that day records "tubular breathing specially on the right side." She was about four months advanced in pregnancy. On the following day it was elicited that she took a chill eight days before admission. It was found that the whole side was dull, but that there were fewer pneumonic signs at the base than at the apex posteriorly, and that in the scapular region the breathing was tubular and the v. r. increased. The pulse was weak and rapid, and the respirations were thirty-four per minute. The temperature—which the night before, at 10, had been 100.6°—had fallen to normal. Up to this time phos. 2 had been administered.

January 3.—The dullness extended from apex to base, but an *ordinary* hypodermic needle revealed no fluid; a warning not needed probably by any here. As there was an absence of breath-sounds, no pneumonic expectoration, and as the dyspnoea and palpitation were very marked the aspirator was used, and sixty-three ounces of thick serous fluid, promising to become purulent, were withdrawn, and bry. 1x and canth. 3x were administered. Alternation is with me so rare that I mention it when adopted.

January 6.—A further quantity of fluid, thirty-two ounces, was withdrawn, much to the relief of the dyspnoea. The pulse was still 120, and the temperature the day before rose to 101.6°. The respirations were twenty-six per minute. The tongue, which had been like that of typhoid fever, was cleaner.

January 12.—Patient was not doing well; the temperature fluctuated a good deal, the tongue kept cleaner, but the pulse was rapid, small, and at times there was much dyspnoea. The symptoms being urgent she was again aspirated, and forty-one ounces of unmistakably purulent fluid were removed. Towards the end of the process she complained of much præcordial pain, and she had to be laid back, fanned, and stimulated. The pulse was 120. She vomited much at this stage. She was put upon peptonized milk, and as the food came up very soon after swallowing, phos. 5x was given.

January 19.—No aspiration since, but the apex posteriorly is very dull. The doubtful sounds at base rendered it difficult to approximately estimate the amount of fluid, some other method of treatment was therefore considered necessary, especially as

the patient did not relish the aspiration, and would not again submit to it. The temperature was 100.2°, pulse 120, small, regular; she was taking three ounces of brandy per diem. No progress was being made, so with the consent of all concerned, she was carefully anæsthetised by Dr. Watson, and I removed a portion of rib. She took the anæsthetic badly, and we could not spend much time over the operation. A large quantity of pus escaped, and after a time she was much relieved. The utmost efforts were made to keep the wound clean and the discharge sweet, and the precautions succeeded. There were times when the temperature ran up, chiefly through the discharge not escaping, but on its being liberated the temperature fell.

She left the hospital on March 10, much better, and arrangements were made to keep up the dressing at home.

She seemed to be doing well, when on March 30, the temperature ran up, premature labour occurred, the child being born before I could reach the house.

The pulse was rapid and the patient weak, and she died on March 31, thirty-six hours or so after the child was born.

The *post mortem* revealed the usual collapsed state of the lung, a wonderfully clean condition of the pleura, with a singular absence of adhesions.

The walls of the heart were flabby, pale, and thinned, death being chiefly due to cardiac failure, which so often during the illness had occasioned us much anxiety.

I need not present to this audience further proof of the danger to the pregnant woman of pneumonia, or pleurisy, nor do I need to refer to the remarks of Dr. Samuel Gee, and others, on the cardiac condition present in these cases, but I may ask what I am to do if I ever have to deal with a similar case, for, surely, no sadder sight can meet the gaze of the medical attendant than that of mother and child almost simultaneously deprived of life.

It will be a relief to you for me to pass on to a case where success followed the means adopted, and you may be led to admit that the recovery was due to these means.

TYPHOID FEVER DURING PREGNANCY.

Mrs. E. G., aged 37, was admitted into the Hahnemann Hospital on June 6, 1898. She was suffering from enteric fever, and subse-

quently her husband and two of her children came to the hospital with the same disease.

They recovered, but the epidemic was somewhat more than usually fatal in their district, which is not far from Liverpool, but in another county. It was stated that she had four children under four years of age—and that she had some children older than these—moreover she was again pregnant at about the fourth month.

I gathered that before admission she had been taking baptisia, as her temperature had reached 103°F., and her pulse 116 per minute.

The abdomen was not morbidly distended, there were spots to be seen, and these came in crops.

She had diarrhoea, and the urine gave the characteristic reaction with sulphanic acid.

There was also one-fourth of albumen thrown down by the nitric acid test.

She was sensible on June 5, but on June 6, after a long ride in the ambulance, she did not recognise me. Her temperature on arrival was 99·2°F., rising at night to 103·2°F. It fell next morning to 101·4°, but it rose to 104°F. at 2 p.m., and a little later she was put into a bath at about 70°F., her face sponged with cold water, and her legs and chest rubbed. She was kept in the bath seven minutes, and her temperature fell to 101°.

It fell from 103·4° to 102° on her being sponged the next day.

It may be stated that before the bath the pulse was 120 per minute, regular, face flushed. After the bath, pulse 108, full; temperature 101·6° F.

The bath was tried the next day with a similar result.

On the following day—June 9—no bath was needed. On June 10 the temperature fell to 98·6 F., and a few doses of terebinth were given for obvious reasons. It rose at 8 p.m. to 102·2°, and the bath reduced it to 100° F. The diarrhoea persisted. I gave arsenicum, and occasionally hyos. was called for at night.

Up to the 12th she was sponged several times, but that process was less effectual than the bath and its action more transient.

After that date sponging was more often resorted to than the bath. She had ten cold baths, which I helped to administer on each occasion:

As the case progressed the first sound indicated stimulants, and she had some 3 oz. per diem.

I would say that the temperature was unusually low during early convalescence, but hæmorrhage did not occur.

Arsen., merc. cor., terebinth and my favourite lachesis—cardiac weakness—were given.

I heard the foetal heart on July 1, and she was delivered without anxiety in due course, and since, yet another addition to the family circle has been announced to me by the mother herself. I have ample details in my journal, if such should be required by any.

I ought to add that Dreschfeld, in the Cambridge system, says: "The puerperal state, pregnancy, broncho-pneumonia, pneumonia, intestinal hæmorrhages during the first week, and albuminuria, are no contra-indications" to the cold bath.

Dr. GOLDSBROUGH said that the case of empyema during pregnancy, which Dr. Hawkes had mentioned, brought to his mind a case of pregnancy complicated with pneumonia. The patient was a young woman between 20 and 30, and it was her third or fourth child. She was seven months pregnant. The pneumonia was of the typical croupous. During the height of the disease premature labour came on very rapidly, and before he could be summoned the child was born in the bag of membranes with the placenta attached.

The child was dead, but he thought if anyone had been there to rupture the membranes probably it would have lived, as it seemed in a healthy condition. The patient made an uninterrupted recovery of the pneumonia, and had no symptoms whatever in connection with the puerpera. Bringing his case alongside that of Dr. Hawkes suggested two or three interesting points of comparison. With croupous pneumonia we had a series of changes which were comparatively innocuous as far as the general health was concerned. The patient, if left alone, would probably get well under ordinary conditions. The occurrence of empyema was a very different condition. Such an occurrence during pregnancy, or even of pleurisy with a considerable amount of serous effusion, he thought, warranted an evacuation of the pleural cavity by operation at once rather than leaving it and using the aspirator. That suggested itself especially by comparison with the case of pneumonia he had just mentioned. In pregnancy the heart underwent a certain amount of hypertrophy—a very considerable amount in some cases, so much

so that chloroform could be given where it could not in the ordinary condition, and without causing any practical alteration in the condition of the pulse. He thought that where empyema occurred the walls of the heart became thin from absorption and from the presence of pus in the pleural cavity, and that was probably the cause of the heart failure in the case mentioned by Dr. Hawkes.

Dr. ROBERSON DAY mentioned the case of a child under two years of age whom he admitted to the hospital suffering from a large abdominal tumour which was unmistakably of renal origin. Operation was out of the question, and secondary growths appeared in various parts of the body, notably beneath the skin of the scalp, some as large as a Tangerine orange. He watched the case to the end, and at the *post mortem* he found that the right kidney was as large as the head of a child at birth. No trace of kidney substance could be found in it; it was soft, and a great deal of it consisted of broken-down gelatinous tissue. A portion was examined microscopically by the Clinical Research Association, and it proved to be a rapidly growing sarcoma, confirming the diagnosis. He had never known any benefit result from operation in these cases; many *partial* successes were recorded where the tumour was removed early, but a recurrence invariably followed. Perhaps Dr. Hawkes would state whether there were secondary growths in the case he had mentioned.

Dr. HAWKES thanked the members for the reception of his paper, and stated that it was eleven years since the first operation he had mentioned was done. If he had such a case before him now he would leave it quietly alone. A reference to Ashby's "Diseases of Children," however, would show that successful results had followed the operation at a very much earlier age than that of the child whose case he had mentioned. Dr. Goldsbrough's hint, with regard to operating very early, might be very helpful, but he would be the first to admit that the condition of the heart seemed to be already established when the case came into the hospital, and that was the actual cause of death.

NASAL SUPPURATION.¹

BY VINCENT GREEN, M.D. EDIN.

Assistant Surgeon for Diseases of the Throat and Ear to the London Homœopathic Hospital.

THIS disease is an extremely prevalent one, for example on December 12, forty-three patients presented themselves at the hospital clinic for diseases of the nose, throat and ear, and of these twenty were suffering from nasal suppuration; and yet a purulent nasal discharge is too often treated with indifference or even ignored, and this though its importance as a symptom and the necessity for local treatment cannot be over-estimated. A general nasal suppuration or purulent rhinitis is an extremely rare condition. It occurs as a sequela to diphtheria and other acute infectious diseases. It is a point worth emphasising that a purulent nasal discharge is almost invariably due to localised disease, within or in connection with the accessory cavities of the nose. Localised suppuration when *acute* is often the sequela of certain exanthemata, *i.e.*, influenza, erysipelas, scarlet fever, &c. Prof. Harke in thirty-seven autopsies on cases of typhoid, influenza, pneumonia and erysipelas, all adults, found suppuration in the accessory cavities of the nose in thirty-one. Acute localised suppuration may also be the result of extension of infection, as is seen in antral empyemata following dental caries, and it occurs not uncommonly as the concluding stage of a cold in the head.

Chronic localised suppuration is usually the sequel to the acute form. It is also caused by continuous infection from a neighbouring organ such as a carious tooth, suppurating pharyngeal tonsil or adenoid vegetations. The last mentioned may also be classed with repeated inflammatory irritations of the mucosa, which give rise to suppuration by

¹ Presented to the Section of Surgery and Gynæcology, January 3, 1901.

increasing secretion and at the same time inducing swelling of certain parts, thereby causing retention and decomposition of such secretion.

It is not possible to do more than touch on the morbid anatomy. The cavities oftenest affected are, firstly, the antrum of Highmore. Here the lining membrane may become gelatinous and cystic and the ostium fringed with polypi which recur as often as removed. Empyema is not uncommon. Secondly, the ethmoid cells; when these are involved the formation of polypi with caries is very common. The scroll-shaped middle turbinate is sometimes converted into a sac of pus, and where pus trickles over it is at first polypoidal and later, owing to destruction of mucosa by adherent crusts of pus and destruction of bone by caries, almost obliterated. This condition, which may affect the mucosa and bone in any part of the nares, has been thought to be a disease *per se* instead of only a symptom of nasal suppuration, the so-called chronic atrophic rhinitis, and various theories have been evolved to account for the destructive processes which occur. Similarly the word *ozæna* should, in the light of present knowledge, be taken to mean a case of nasal suppuration that has gone on untreated. Of all the cavities the sphenoidal sinus undergoes least change when the seat of disease,—swelling and purulent catarrh of the mucosa, with sometimes blocking of the ostium and empyema, being almost the only changes observable. In the case of the frontal sinus, caries and necrosis of one or other of its walls are not uncommon, and polypi are often present in the sinus itself, as well as fringing the infundibulum and projecting from beneath the middle turbinate into the meatus.

SYMPTOMATOLOGY.

The discharge varies a great deal. The pus may only be present in very small quantities and its presence masked by gray or amber-coloured secretion, which may lead to error in diagnosis. The pus may be liquid or in the form of stinking crusts. When the latter, it is dignified with the

name *ozæna*, and described as a pathological entity, the validity of which I have already referred to. The discharge may be from anterior nares, or—this an important point—entirely post-nasal, or from both anterior and posterior nares. Sometimes, when post-nasal, the discharge may be only sufficient to cover the pharyngeal wall with a fine glaze. According to Grunwald, our greatest authority on the subject, this dry glazed condition of the pharyngeal wall is diagnostic of the existence of nasal suppuration. The discharge may be characterised by periodicity, the patient may say that it is always more copious in the morning, which is suggestive rather of empyema of antrum, or the discharge may seem to cease for a week or two and then become very copious; this may be due to swelling of parts causing retention for a time. The discharge is unilateral as a rule, but it should be noted that the pus may flow from one naris to the other through the pharynx, and so become bilateral. Lastly, it is no uncommon thing for a patient to positively deny the existence of any discharge where nasal suppuration is known to exist. Here careful enquiry may elicit the symptoms: constant hawking of phlegm, dryness and thickness in the throat of a morning, &c.

The few remarks made on the morbid anatomy will help to make clear what may be stated as an axiom, namely, that in the great majority of all cases mucous polypi are pathognomonic of localised suppuration. This, of course, has a very important bearing upon the treatment of polypi. Ethmoidal is the suppuration most commonly associated with the presence of polypi. Hypertrophies of the mucosa have a similar relation to nasal suppuration, though not so close.

The pus, flowing out of the nares, gives rise to eczema of the upper lip and *alæ nasi*; posteriorly, it may cause pharyngitis—granular and dry, laryngitis sicca, hoarseness, cough,—in fact, any chronic laryngeal symptom, asthma, bronchial catarrh, and, I believe, in some cases phthisis. Dr. Blackley may remember the case of a soldier lately in the wards rather suggestive of this. Leucoplakia, furred

tongue, digestive troubles, and retching in the morning I have seen caused by the swallowing of pus. Partial or complete loss of taste and smell are often present. The pus, especially in ethmoidal suppuration, not infrequently travels up the lachrymal duct, infecting the sac. I have a patient at present under my care, with erysipelas of the face, not her first attack. She has suppuration of the ethmoid cells, both sides, and double dacryocystitis, which supervened subsequently to the nasal suppuration. The pus also may pass up the Eustachian tube to the middle ear. Headache is a very important symptom. It is usually frontal, but may be vertical, over a parietal eminence, or occipital. There is no distinct relation between the seat of disease and part of head affected, but the seat of pain is usually constant in any given case. Asthenopic troubles and mental depression are symptoms also to be looked for in the sphere of the nervous system.

THE DIAGNOSIS.

For the proper carrying out of this, a careful examination of the interior of the nose is necessary. Supposing pus to be present, it is of great importance to note its point of emergence. To do this it will be necessary to wash or mop out all pus present; then, if the pus appears below the level of the middle turbinate, it may be the anterior ethmoid cells, antrum, or frontal sinus which are involved. Then an intermittent unilateral discharge, with infraorbital pain and caries of upper bicuspids and molars, would be suggestive of antral trouble. Exploratory puncture is necessary for certain diagnosis. A continuous discharge of pus, with the presence of polypi and granulations in the region of the middle turbinate, which shows softening and caries, are very suggestive of anterior ethmoidal sinusitis. Careful and thorough probing should always be carried out; caries cannot be diagnosed without it, and it assists in determining the origin of pus and polypi. Empyema of the frontal sinus is characterised by continuous discharge of pus, tenderness on pressure in superior internal angle of

orbit—this I have found a most useful diagnostic symptom—and frontal headache.

If the pus is seen on the superior meatus—that is, above the level of the middle turbinate—it is obvious that it cannot be from the three regions mentioned, which all open beneath the middle turbinate. It must, therefore, be rather from the posterior ethmoidal cells or the sphenoidal sinus. In the case of the latter, most of the secretion escapes by post-nares; it is scanty, and tends to crust. Sphenoidal empyema is often the *fons et origo* of ozæna. The head pain is very characteristic, deep-seated, vertical or occipital, and often very persistent. When the suppuration is situated in the posterior ethmoidal cells, the pus escapes anteriorly and posteriorly, and is usually very copious. Polypi are frequently present, and tenderness and pain at the root of the nose are also characteristic. Besides the conditions mentioned, suppuration may occur in many of the small recesses of the nose, and the septum is also rarely the seat of the trouble. Foreign bodies, if allowed to remain in nasal cavities, will cause suppuration.

TREATMENT.

As regards the treatment for sinusitis, especially without caries, the only drug I have found of any avail has been aur. teriod. given in the third decimal. In acute cases I always give pulsatilla 30 a trial, and, especially where the frontal sinus is affected, often with excellent results. Locally, sprays and liquid snuffs should be used to wash away all secretions and keep the meatus and recesses of nose clean. Then, having localised the seat of the trouble, it should be treated like suppuration elsewhere. In the case of the antrum, the teeth should be attended to and, where necessary, the antrum itself opened either through the alveolus or the canine fossa, and washed out. For diagnostic purposes the inner wall of the antrum may be punctured by means of a fine trochar, and canula introduced through the nose. To get at the ethmoid cells it is necessary to remove the anterior portion of the middle turbinate, thereby

exposing the cells, and allowing of curettage and drainage. In the case of the frontal sinus, free drainage is aimed at by freeing the infundibulum. Where secondary changes have occurred in lining membrane it is generally necessary to trephine. In the case of the sphenoidal sinus the difficulty is to reach it. The entrance to each sinus lies a little above the level of the corresponding posterior nares, the upper edges of which form the junction of the anterior and inferior walls of the sinus. The treatment here is to lay open the cavity by a breach in its anterior wall, and scrape out.

PROGNOSIS.

The prognosis of nasal suppuration in uncomplicated cases depends almost entirely on a correct diagnosis, given which, the prognosis is excellent. The diagnosis is, however, often very difficult, as owing to cases being often of long standing the suppurative foci are often multiple and bilateral.

In conclusion I would emphasise what I believe to be the chief source of error in the diagnosis and treatment of these cases—it is treating symptoms as if they were the disease. Do not be deceived by the patient who comes to be treated for asthma, huskiness, sore throat, headaches, indigestion, cold coming out on lip, polypus, ozæna, post-nasal catarrh, &c., but seek out the ultimate cause; use largely the process of elimination in making your diagnosis. Below are a few brief notes of cases bearing on this subject which I have seen during the last six months.

R. R., aged 18 years, seen December 1, 1900, complains of difficulty in swallowing, deafness, and sore throat.

On examination was found to have pus in inferior meatus on left side, adenoids and granular pharyngitis. On December 8, adenectomy was performed. Week later patient reported much better. No pus to be seen in inferior meatus, pharyngitis better and hearing normal. Here the suppuration was evidently due to adenoids.

J. D., aged 53 years, complains of deafness. Questioning elicits the symptoms of stuffiness, running from the nose and headaches. Examination: both membranæ tympani indrawn.

Right middle turbinate polypoidal and hypertrophied, middle meatus blocked anteriorly by polypi bathed in pus. The anterior portion of the turbinate was removed, and polypi and cheesy material out of anterior ethmoidal cells removed by curette. Two months later the report is—still improving, deafness better, very little discharge.

W. L., aged 29, complains of sore throat and huskiness. Cross-examining the patient he admits to having constant sensation of something trickling down the throat.

Examination shows congestion of vocal cords with mucus adherent to them; granular pharyngitis with jelly-like lumps streaked with yellow pus in the naso-pharynx. The nasal cavities show excess of moisture. Aur. teriod. 3x t.i.d. and alkaline spray for nose was ordered. One month later, on December 14, the patient's report is—"I'm practically well. No discharge, and huskiness gone." This was probably a case of commencing sinusitis.

Mr. DUDLEY WRIGHT (in the Chair) thought it a mistake to suppose the paper only appealed to a limited class of practitioners. Chronic nasal suppuration was extremely common, and was met with to a large extent in general practice, but was often unrecognised. He believed that cases of anæmia and chronic gastritis were brought about by carious teeth, Rigg's disease, and chronic disease of the tonsils, but no doubt the form of gastritis which Dr. Hunter called septic gastritis—septic only in origin and not in appearance—was largely due to nasal suppuration. If those cases were treated in the right light by the general physician, a great amount of suffering and many cases of anæmia would probably be prevented. Dr. Green had done well to lay stress upon nasal suppuration being caused generally by a local lesion, that is a lesion of one of the sinuses or some of the ethmoidal cells, and also that ozæna was merely a symptom. He mentioned three cases of local suppuration of the sinuses, showing how difficult it often was to localise the site of the disease. In the first, that of a young lady, the antrum on the side on which suppuration occurred had been washed out and examined and nothing found wrong with it. The presumption was that the suppuration came from the frontal sinus. He therefore opened it, but found nothing. He also opened the ethmoidal cells with the same result. Finally he satisfied himself that the suppuration came from the sphenoidal sinus. In a second case he found the ethmoidal cells were affected after the

antrum had been opened. It was certain that one could do a great deal in cases where the sphenoidal sinuses were concerned. He had dealt with a great number, and had seen recently a very typical case showing the long course a disease would take. The young lady had been to a great number of physicians for chronic headache; to many of them, however, she did not mention chronic cold in the head, from which she suffered at the same time. There was no doubt about the nasal suppuration, and the headache was caused by it, but the question was where the suppuration came from. He passed a probe into the sphenoidal sinuses and found carious bone in both of them. He scraped them out six weeks ago, and the disease was very much lessened, but not cured. The peculiar point was that when he put the probe into the sphenoidal sinus it caused the pain on the top of the head which used to prostrate the girl when it came on. The great point was to provide free drainage in all cases, and the removal of the middle turbinate was very important to insist upon in frontal sinus cases, because it gave the best possible chance for the spontaneous disappearance of the discharge without further operation.

Dr. MACNISH said that during the prevalence of influenza he had known a great number of patients who, after recovery, complained of anæmia and kakosmia, in fact in one week he had three patients who suffered in that way. Lately at the dispensary he had a great number of patients who had been treated for ozæna of a most obnoxious kind, and they had all refused to have any surgical treatment. He had been giving them cuprum 3x and also used a dilution of cuprum 3x to wash out the nose with. In one case it had been remarkably successful. Previously they had been using all sorts of nasal douches. Hippozænin 6 and cuprum 3x—in anæmic cases specially—had been found by experience to be the most beneficial.

Dr. JAGIELSKI said he had had great experience in such cases at the Margaret Street Infirmary, and they were amongst the most annoying cases a doctor could have. The most important point was to look to the general health, and particularly to the action of the skin and to the digestion. Of local remedies which at the same time acted generally or constitutionally, he could not speak more highly than of thuja. He used that first internally, but afterwards he taught his patients to drop their brush into the bottle and then, on leaning back as much as they could, let the drops go down till they felt them in the throat, when they should at once spit them out. Hepar sulphuris and also silicea

were excellent remedies, and then came the phosphates with calcaea and so on. He had used thuja with splendid results, even in cases which had been operated upon for polypus but where the disease seemed to return again; a constant local use of thuja in mother tincture once or twice a day for a year longer, prevented this reappearance entirely.

Dr. GREEN, in reply, said that he might have mentioned in his paper that chronic nasal suppuration was often a cause of caries of the teeth. With regard to disorders of taste and smell where caused by the influenza poison the prognosis was extremely bad. As for post-nasal catarrh, he did not believe there was such a disease; it was merely a symptom. Dr. Green had not used cuprum for lessening the odour. The smell was, however, entirely due to neglect; pus had been allowed to remain until it had become offensive, so that in a bad case of so-called ozæna, by making the patient thoroughly clean the nose, relief of the smell would be obtained without in any way affecting the disease. With regard to douches, sprays, &c., he considered that douching was dangerous. The water might be forced into healthy cavities and even up the Eustachian tubes; for example, in suppuration of the ethmoidal cells, pus might be forced into a healthy antrum of Highmore. He did not think douching should ever be allowed. In hospital practice he usually ordered a spray, though for economic reasons the patient was usually instructed to use the fluid as a snuff, snuffing it up from the palm of the hand. Then the fluid only went up the natural way in which the air went and was not forced into a cavity where it should not be. The choice of local application was not founded on a very scientific basis, consequently vapours, sprays, nebulised oils, powders and paints were all recommended. Whatever the substance, it should be antiseptic, but whether an oily fluid was better than the watery fluid he was not prepared to say. In the out-patients' department he had used with success a bland oil called parolene, containing ichthyol, for getting away the crusts. He believed some specialists decried watery fluids very strongly. Dr. Jagielski had suggested that the local condition was to be improved by attention to the general condition. He would rather improve the general condition by attention to the local.

A CASE OF VESICAL CALCULUS.¹

BY W. CLOWES PRITCHARD, B.A., M.R.C.S., L.R.C.P.

MR. CHAIRMAN AND COLLEAGUES,—Early in April, 1900, N. D., aged 50, milkman, presented himself and gave the following account. He was aged 50, with an exceptionally good family history. He had enjoyed excellent health until 1868. In that year he had on several occasions passed a lot of "red sand," which had caused a considerable amount of pain during the acts of micturition, and which left a sense of uneasiness for some little time after. As these occurrences became more frequent and the distress increased he went to Guy's in October, 1869. He was there admitted and came under the care of Mr. Cock. From the history given, vesical calculus was evidently thought of, and accordingly Mr. Cock passed a sound, but no calculus was found. After remaining in hospital for six weeks he was discharged feeling much better, no doubt as the result of judicious dieting and rest.

Soon after his discharge from Guy's, however, the old symptoms returned and gradually got much worse.

About 1871 this man noticed an increasing frequency of the acts of micturition in the day time, the frequency varying with the amount of exercise taken. At night time whilst resting there was no increase noted—sometimes he would get up once during the night to relieve the bladder. About this time he also noticed a new symptom—during micturition the stream would suddenly stop and he would have very sharp pains deep in the perineum and at the end of the penis. So things went on, gradually getting worse and worse, other symptoms appearing, such as hæmaturia and pains on defæcation, and the old symptoms increasing in severity until his life became a misery, and he was compelled to give up all work in 1892.

¹ Presented to the Section of Surgery and Gynæcology, January 3, 1901.

Notwithstanding the almost constant annoyance he dragged on until April, 1900. He then consulted me, and from his account a diagnosis of vesical calculus was at once made, and confirmed by passing a sound. From the sounding the calculus seemed to be a large rough one. The patient was accordingly advised to undergo an operation, a suggestion which he readily agreed to, and on April 17 he was admitted to the Buchanan Hospital.

On admission the temperature was practically normal and pulse good. He was, however, in rather a nervous condition and was given *ignatia*. The urine was examined and was found to contain a very large amount of pus. When allowed to stand in a specimen glass the pus and detritus seemed to fill nearly one-third of the vessel.

In consequence of this the bladder was washed out daily with *lot. ac. borici*.

On April 19 the patient was put under A.C.E., a Petersen's bag passed into the rectum and filled with *lot. ac. borici*, and eight ounces of the same solution were injected into the bladder and the penis secured by means of a piece of tape. A median incision, about three inches, was then made, reaching well down over the pubes, the bladder opened, Petersen's bag allowed gradually to empty itself, the ligature removed from the penis, and the calculus was immediately found and easily removed.

The bladder was then nearly closed by four sutures, the muscle and fascia next, and, lastly, eight sutures were introduced through the skin and subcutaneous tissues, after a medium sized drainage-tube had been inserted into the bladder. Two of the last-mentioned sutures were placed below the opening for the drainage-tube. Some iodoform gauze was lightly packed round the tube, the whole well dusted with boracic powder and the usual dressings applied. A catheter was next passed per urethram into the bladder and secured *in situ*. The patient was then put to bed, and instructions were given to change the dressings every two hours, and for the boracic powder to be plentifully used.

The next morning I found my patient with an absolutely normal temperature, although he had slept but little during

the night. All the urine had escaped through the drainage-tube and wound, none passing by the catheter.

I then passed some boracic lotion through the catheter, and a small amount into the drainage-tube. Patient was put on canth. 4x and bell. 1x, two hours alt.

The next morning I found a temperature of 98·8°; it had, however, reached 99·8° during the night. The bladder was again irrigated with lot. ac. borici, and *rep. omnes* was the order.

The bowels were well opened, naturally, forty-eight hours after this operation, and patient continued to be fairly comfortable. The catheter was taken out on the third morning, cleaned, and replaced.

On the fifth morning a little urine began to escape through the catheter, and this amount gradually increased. On the eighth day the catheter was tied in for four hours, and then left out for four hours, the dressings being still changed every two hours.

On the tenth morning the superficial sutures were removed, the part below the drainage-tube having firmly healed by primary union, as well as the upper part of the wound. At this time quite a considerable amount of urine was passing by the catheter through the penis. From the date of operation to the fourteenth day, the highest temperature had been 99·8°, and we began to congratulate ourselves on the result. On this date, however, the temperature ran up to 100·6°; this was accounted for by some urethritis, and the appearance at the upper part of the wound of a small stitch abscess. A good washing-out with boracic lotion was now given, and bell. and bry. ordered every two hours alternately.

On the fifteenth day, to my great consternation, the temperature reached 103°, and I must confess to having felt very downhearted. However, hot fomentations were ordered to the abdomen, and the patient given urotropine gr. v., t.d.s. The next two days temperature reached 102° and 101° respectively, and the following day 99°.

From this time the patient made an uninterrupted recovery, and on the twenty-third day the sinus would barely

admit a probe, and everything was most satisfactory. He was up a month after the operation, and left the hospital feeling quite well and comfortable. I had the pleasure of seeing him last Monday, when he was in the best of health, and had been doing his old work for some months.

No doubt you all noticed quite recently the articles in the *British Medical Journal*, discussing the suprapubic operation for vesical calculus. The conclusion arrived at seemed to me to be that it was not advisable to do that operation when there was much cystitis. The above case, however, will show that even when cystitis exists and pus abounds, it is possible to do it; as to the advisability—well, I leave that open to discussion. I must say, however, the successful termination of the above-mentioned case has made me eager to try it once again, with but one modification—I shall not tie in a catheter until the fifth or sixth day.

Mr. DUDLEY WRIGHT (in the Chair) said the case was extremely interesting. He would ask the author what sound he used, because he had heard a rather curious story of a leading London surgeon who had failed to discover stone with an ordinary sound, which was known to be there by previous examination with an ordinary catheter. He was interested in hearing that Mr. Pritchard used the Petersen's bag. That was now given up in the Homœopathic Hospital and they adopted the Trendelenberg position. He thought if Mr. Pritchard examined the calculus he would find that it was not oxalic acid. It was true it had somewhat the look of one externally, but oxalate calculi were formed entirely in the kidney, and one of that size would never be passed through the ureter into the bladder. As to the drainage tube, he (Mr. Wright) had found the ordinary drainage tube sold for bladder cases, too small. He used a large drainage pipe and found it more satisfactory. It got the urine away more easily, and the leakage round the wound was less and there was less likelihood of suppuration afterwards.

Dr. ROBERSON DAY said that Mr. Pritchard's case reminded him of a very interesting patient he had had some years ago. A child, 7 years of age, was the subject of old infantile paralysis, and she came to him suffering from constant enuresis and dysuria; the urine was continually trickling away and there was

a urinous smell about the patient, who was emaciated and her life rendered miserable. He found on examination that the urine was highly alkaline and there was a large excess of phosphates. He at once suspected a calculus was the cause of the trouble, and on passing a sound he found it. He then handed her over to the surgical department of the London Homœopathic Hospital, where the stone was crushed and removed. There was great interest attached to the case because the infantile paralysis evidently interfered with the nutrition of the bladder and no doubt was the *fons et origo mali*, and that led in all probability to the alkaline urine and the subsequent deposit of phosphates, in the form of a calculus. With the removal of the calculus all the distressing symptoms at once disappeared, and the child rapidly gained flesh and was restored to health, with the exception of course of the paralysis, a result eminently satisfactory to all concerned.

Mr. PRITCHARD in reply said that the sound he had used was one of the ordinary metal sort. As to the Trendelenburg position, he had not tried it; his experience had not gone so far as that, but he would think of it in future. He was surprised to hear the opinion expressed that the stone was not likely to be an oxalic acid stone. He was not satisfied that he was wrong and would have it examined again. He had omitted to mention that Mr. Shaw had seen the case with him at the time when the temperature of the patient was 101°, and had suggested urotropin. The patient was put on this drug and did very well. In some cases of cystitis with much pus, urotropin acts very well.

ACUTE CATARRHAL AND BLENNORRHOEAL
OPHTHALMIA.¹

BY E. LUCAS HUGHES, M.R.C.S., L.R.C.P.LOND.

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THESE eye affections are frequently met with by the general practitioner, who is called upon to treat them, at any rate in the first instance, unless they should happen to come to a hospital; it cannot be said, therefore, that I am bringing before you a subject of mere interest to the eye specialist. The subject is not only of interest but of the greatest practical importance to all medical men. I purpose considering the two classes of cases, catarrhal and blennorrhœal, because of the almost impossibility of determining by appearances alone, at the first onset, whether any given case, if severe, is one of catarrhal or incipient blennorrhœal ophthalmia. I am limiting this term "ophthalmia" to the more severe forms of conjunctivitis, for it is in these more severe forms where the difficulty arises. Professor Fuchs in his excellent text book of Ophthalmology says:—"Violent cases of ophthalmia catarrhalis are in their inception often hard to distinguish from an acute blennorrhœa of light intensity."

With regard to the catarrhal cases the first thing to notice about them is that they are very contagious; epidemics occur from time to time, especially among children, and the contagion is usually spread from one to the other by the indiscriminate use of towels, handkerchiefs, &c. The cases are dependent largely on atmospheric conditions, and usually occur at those times of the year, notably the spring, when so many people are attacked with coryza and bronchial catarrh. Both eyes, as a rule, are attacked, one perhaps a short time before the other, and when there is neglect or faulty treatment, complications, such as iritis and corneal ulcers, are

¹ Presented to the Liverpool Branch, January 10, 1901.

almost certain to arise. The cases may be intensified by resorting to ignorant measures on the part of the uncultured laity, household remedies so-called, such as the application of raw meat, cooked onions, bathing the eyes with urine, &c.—this latter being I believe a disgusting measure resorted to in some country places. Perhaps the case may have started by being a simple conjunctivitis, and then is converted by these measures into an intense catarrhal ophthalmia, exactly similar in appearance to those cases I have spoken of as occurring in epidemics. In these catarrhal cases the ocular conjunctiva may be little affected, the palpebral conjunctiva is intensely reddened, and sometimes assuming a croupous character becomes covered with a fibrinous exudation, the removal of which causes slight bleeding.¹ There may be some cedematous swelling of the skin near the orbital margins and along the borders of the lids, there is intense lachrymation, a feeling of sand about the eyes, caused by flakes of mucus, these symptoms being better in the morning and gradually getting worse and worse towards evening. Small granules are seen especially in young persons upon the palpebral conjunctiva, chiefly in the retrotarsal or orbital portion. For a few days in very violent cases the cornea is hazy. The ocular conjunctiva is surprisingly free in some cases, there being only a little yellowness behind the insertions of the recti muscles, and a few engorged vessels. Occasionally there may be seen in elderly persons slight and quite superficial ulcers, or rather we might term them “epithelial abrasions,” and sometimes in old persons the ocular conjunctiva is cedematous.

With regard to the treatment of these cases, so long as there is no croupous exudation, as we all know, the sovereign remedy in the orthodox school is the application of nitrate of silver. Professor Fuchs recommends

¹ During an epidemic of diphtheria, catarrhal cases occasionally develop a fibrinous exudation, but with no infiltration, as in diphtheritic ophthalmia; this is the croupous ophthalmia of some authors. They are very acute and should be treated with hot fomentations, weak chlorine water, and argentum nitricum or kali bichromicum given internally. Argentum nitricum in these cases applied locally would increase the exudation. Many diseases have a catarrhal basis, notably measles, and even membranous croup of the trachea arises from “catching cold.”

Von Graefe's method of brushing the everted lids (using a camel hair pencil) with a 2 per cent. solution, the excess being quickly washed away with warm water, or with a weak solution of common salt. A very fine bluish-white pellicle, which is really a superficial slough, is formed, and after a slight increase of all the inflammatory phenomena, improvement gradually sets in. The application has, however, to be repeated in about twenty-four hours, taking care this is not done until all the slough of the preceding application has come away. These sloughs come away in shreds, and beyond the slight exacerbations immediately following the applications, the relief experienced by the patient is nearly immediate and almost always very great. Care should invariably be taken not to make the applications too energetically or too frequently. For myself, I must say this piece of practice was one of the few bright things which gladdened me in my old days of allopathic prescribing. General rules of hygiene are then enjoined upon the patient, he must avoid overuse of the eyes, and every precaution should be taken against the spread of the disease by contagion. That is all: the disease is regarded entirely as a local one, and is practically treated by one sovereign local remedy. The question therefore arises—can we improve on this treatment? In the year 1848, Dr. Dudgeon, as most of us know, argued that this local application acted after a true specific manner, in fact, homœopathically (*British Journal of Homœopathy*, vol. vi., p. 216). He pointed out that owing to the chemical and mechanical action of the secretion, the action of the caustic upon the eye was but momentary, and its quantity infinitesimal. The small and diluted amount not immediately going to form the slough was really what brought about cure. Dr. Richard Hughes in his "Pharmacodynamics," commenting upon this says: "I myself have been so satisfied with even its internal effects in ophthalmia neonatorum that I have never had to resort to any external measures beyond those needed for cleanliness. The experience of our American oculists is quite confirmatory of its power over even purulent inflammations of the conjunctiva. Dr. Angell commends the remedy 'in affections

of the lining membrane of the lids, and of the lachrymal duct and sac, when there is an abundant discharge of pus,' and Drs. Allen and Norton write:—'The greatest service that *argentum nitricum* performs is in purulent ophthalmia. With large experience in both hospital and private practice, we have not lost a single eye from this disease, and every one has been treated with internal remedies, most of them with *argentum nitricum* of a high potency, 30th or 200th. We have witnessed the most violent chemosis with strangulated vessels, most profuse purulent discharge, even the cornea beginning to get hazy, and looking as though it would slough, subside rapidly under *argentum nitricum* internally.' " As far as I have gone with my own very limited experience of nitrate of silver internally the results have been most satisfactory. I have found, however, the want of cleanliness among our hospital out-patients, together with the constant irritation of Liverpool smoke and soot, an important impediment to success, when the mere internal use of the drug was depended upon. One is nearly always tempted to prescribe some cleansing or antiseptic lotion, if only to retain the patient's confidence. This giving of a lotion applies to other remedies and other eye affections, *arnica*, *euphrasia*, *ruta*, and a number of other remedies being given both internally and as a lotion. With regard to *argentum nitricum*, my usual plan has been to give the remedy internally 6th or 3rd centesimal, brushing the everted lids with a 2 per cent. solution at the patient's visits (never using it as a collyrium) and giving for the patient's own use a lotion of weak boric acid. I have nearly always found this succeed admirably.

In the eighteenth century St. Ives first employed nitrate of silver for eye inflammation, but it was not until the last century that it began to be generally used by medical men. I am not aware that Hahnemann used it, but he may have done so. Professor Fuchs, who is an allopath, says about it:—"People had a natural dread of instilling so irritating a liquid as a nitrate of silver solution into a violently-inflamed eye. In fact," he says, "in a perfectly sound eye this solution excites violent irritation of the conjunctiva, and

it is quite possible to produce an artificial catarrh by it. How, then, does it happen that it has such a beneficial action in conjunctival catarrh?" Then follows his ingenious and very "orthodox" explanation, which, in the light of our knowledge of the real homœopathic action of the drug given internally, is quite an inadequate one. He says: "The delicate bluish-white pellicle which covers the conjunctiva directly after the application is due to the coagulation of the albumen of the cells in the upper layers of the epithelium by the nitrate of silver, so that these layers become opaque and die. The escharotic process acts like an irritant which increases the existing hyperæmia. This not only gives rise to an increase of the annoyance suffered (exacerbation), but also induces a transudation under the eschar, so that the latter is loosened and finally cast off. But when this takes place, the micro-organisms contained in the upper layers of the epithelium are thrown off with the eschar, and so eliminated from the eye." This explanation says nothing about any micro-organisms below the eschar, and it also says nothing about any reason why nitrate of silver should invariably be the "escharotic" employed. If this theory of his is true why does not another "escharotic" act equally well? But it does not; others, in fact, have been used, the eschars have fallen away, and presumably the micro-organisms gone too, but no specific action over the inflammation like the nitrate of silver action has been witnessed. For instance, when zinc or copper salts have been used, they have been found violently irritating, but in no degree specific. Nitrate of silver, therefore, has a specific action, and the secret of its specific action is its homœopathicity.

Besides nitrate of silver, we have in homœopathy a number of remedies, all of great value when properly indicated; they are chiefly aconite, apis, arsenicum, belladonna, euphrasia, mercurius, rhus, and sulphur. Professor Raue says that aconite is always indicated at the beginning of any ordinary catarrhal conjunctivitis, where there is great redness, burning, and heat in the eye, and where it has been brought on by exposure to sharp cold winds. Drs. Allen

and Norton say "that the forms of eye-inflammation verifying the drug are of everyday occurrence. It is in the first stage (before exudation) that it is so useful, marked by great heat, burning, and pain"; there is chemosis and pain so terrible that the patient wishes to die. Drs. Allen and Norton recommend the drug also in severe purulent cases. Dr. Farrington, in his "Clinical Materia Medica," says: "Aconite is indicated in inflammatory affections of the eyes, arising from exposure to dry cold winds. There is a great deal of heat and burning in the eye, it feels as if full of sand, and is exceedingly sensitive. The pains are so intense that the patient wishes to die; he declares that he cannot stand them. The eye-ball feels as if forced out of the orbit, and aches. This aching is worse when the affected part is moved or touched. Photophobia is intense" (p. 300). When œdema of the lids is a prominent feature, either with or without chemosis, apis is the remedy. On page 107 of his book, Farrington says: "In external diseases of the eye, apis is not without value. The eyes are over-sensitive to light. The conjunctiva is reddened, puffy, and chemosed. Still this swelling under apis is more from congestion than from a true chemosis as under rhus tox., which is very similar, especially in œdematous swelling of lids, chemosis, hot gushing lachrymation, erysipelas." A severe erythema of the surrounding skin, which is not erysipelas, sometimes occurs in these cases, which, I think, rhus would probably benefit. The latter remedy is more useful in the purulent forms of ophthalmia, and in apis we have stinging pains, worse towards evening, and relieved by cold applications. The lids in apis are of a bluish-red. In rhus the pains are worse after midnight, and relieved by warmth, while the erythema is a dusky-red. Arsenicum has pale œdematous lids, with very acrid lachrymation, the palpebral conjunctiva being very red. The arsenicum patients are scrofulous, and although, as in rhus, the eyes are relieved by warm applications, yet out of doors they are able to open their eyes in the cool air, keeping them tightly shut when indoors, even although the room may be dark. Apis can be used in scrofulous cases also, if it is followed by kali bichromicum.

Belladonna is indicated by the suddenness of the attack, by the violence of the symptoms, the intense photophobia, and the bright redness of the conjunctiva. The right eye is more usually the one attacked, or else it is attacked before the left one. Euphrasia, like arsenicum, is indicated chiefly in scrofulous cases; there is photophobia, especially from artificial light, the discharge being acrid and purulent. Under mercurius, the discharge is thinner than the euphrasia discharge, and the symptoms generally are greatly aggravated from the heat of the fire. Calcarea carbonica and rhus are both useful in those cases which have been caused by getting wet. Sulphur is useful in those cases which are worse in hot weather and worse when near a hot fire, and which have the feeling of one or more sharp spicules of glass in the eye. Other remedies are sometimes useful, such as pulsatilla, natrum muriaticum, sepia, &c. Pulsatilla has a bland, perfectly non-irritating discharge.

My second group of ophthalmia cases comes under the heading "Acute Bleorrhœa," and much that has just been said by way of treatment equally applies to the blennorrhœal as to the catarrhal. In fact it is by strict attention to the indicating symptoms rather than by attempting to make a diagnosis between catarrhal and blennorrhœal that success in treatment is attained. We have apis, arsenicum, argentum nitricum, mercurius, rhus, pulsatilla, &c., all indicated at times. In addition, hepar is an excellent remedy in many purulent cases. Argentum nitricum is perhaps the most commonly indicated remedy, and the external application of chlorine water is strongly recommended by Drs. Allen and Norton. Nitric acid is useful internally in gonorrhœal cases, used externally as well, as recommended by Allen and Norton, two or three drops of the 1st or 3rd potency to the ounce for a lotion.

Acute blennorrhœa (Greek, *βλέννα*, mucus; *ρέω*, I flow) may come on very rapidly, sometimes reaching its fully-developed stage in thirty-six hours. Professor Von Arlt, of Vienna, divides the disease into three grades (1) hydrorrhœa, (2) blennorrhœa, (3) pyorrhœa, but for convenience we may term the disease generally "acute blennorrhœa," or else

"acute purulent ophthalmia," especially as during the initial stage of hydrorrhœa authorities do not consider the secretion to be at that time contagious. By the term "blennorrhœa" we strictly mean a contagious muco-purulent secretion, not entirely purulent, but the term is a convenient clinical one for all cases. It occurs most frequently in two classes of patients, (1) newly-born children, (2) youths and men who have contracted gonorrhœa, and whose eyes have become infected by the gonorrhœal secretion. A person, however, who is suffering from gonorrhœal ophthalmia need not necessarily have ever had gonorrhœa. Piringger mentions the case of a soldier affected with gonorrhœa, who visited his home; his brother sleeping in the same bed with him contracted gonorrhœal ophthalmia, as did also a second brother and finally his mother.

In newly-born children the attack occurs soon after birth, generally between the second and the fifth day; it is not necessary that the mother should have contracted gonorrhœa, for many cases of ophthalmia neonatorum are the result of a leucorrhœal discharge. Without wishing to be in any way dogmatic in recommending Credé's method of prophylaxis, which consists in treating (as a routine practice) all infants' eyes at birth with weak nitrate of silver drops, I must say that I believe the modified practice of brushing the lids with a weak solution, and quickly washing away any excess of the drug, a very wise precaution. Sir John Williams always counselled the students of University College Hospital to use the drops at every case they attended, and when I was his Obstetric Assistant, one of my duties was to see that each student carried in his bag a little drop-bottle of the silver salt solution for that purpose. Whether we, as homœopaths, sworn never to do the slightest harm to our patients, not even with the object of staving off an evil, imaginary or otherwise, can agree with the above procedure or not, we can and do all agree, I am sure, that it is impossible to be too strict and too careful in the matter of cleanliness, especially with regard to the baby's eyes. They should be immediately wiped and then gently bathed with warm water, and subsequently carefully watched for the slightest sign of

inflammatory mischief, which if occurring should be promptly met by the appropriate remedies, internally and externally. For a medical man to allow a child's eyes to be ruined without from the first doing everything in his power to prevent such a calamity would be most reprehensible. Credé's method has reduced the number of cases in the Leipsic Lying-In Hospital from 10·8 per cent. to 1 or 2 per cent., and considering that at least one-tenth of all blind persons owe their misfortune to this fearful disease, I, for my part, do not think that we are justified in allowing the very slight and transient injury produced to prejudice us against the application, when we have the faintest suspicion of a leucorrhœal or gonorrhœal discharge infecting the eyes. It may not be strict homœopathy, but it is wise prophylaxis. Why should homœopaths be biased against it?

Every patient who comes to us with gonorrhœa should of course be warned against the terrible consequences of carelessness in touching his eyes and so infecting himself with the gonorrhœal discharge. I make it a point never to allow a patient who has gonorrhœa to leave my consulting room without warning him by pointing out this danger. I suppose all medical men do the same. Mr. Clement Lucas drew attention to the fact that gonorrhœal rheumatism occurs in the joints of infants secondary to ophthalmia neonatorum. This was published in the *British Medical Journal* of February 28, 1885, and since then the question of joint disease secondary to ophthalmia has from time to time cropped up, and has interested some of our profession.

There is another form of acute ophthalmia, which occurs in epidemics, especially on the continent. It is the acute form of trachoma. Egyptian ophthalmia, or trachoma as it is called, is a muco-purulent or purulent ophthalmia which differs from acute blennorrhœa chiefly by its chronicity, and by the formation of grayish or pinkish granules in the fornix conjunctivæ of the upper or lower lid, especially the upper, but some cases of trachoma are acute, although rare in this country. Greefe says that hardly a year passes by in Berlin without an outbreak of this acute Egyptian ophthalmia occurring. In the early Napoleonic times this form of

ophthalmia is said to have destroyed the sight of many hundreds in a few days. Greefe says that certain epidemic ophthalmias are often confounded with this one, but they are really distinct. He states that there are three ordinary forms of bacilli producing contagious ophthalmias: (1) the pneumococcus conjunctivitis attacking children, the disease running a benign course—this must be identical, I think, with the catarrhal ophthalmia I have mentioned; (2) the diplobacillus of Morax and Axenfeld found in the more chronic cases; (3) the Koch-Weeks bacillus found in all cases of Egyptian ophthalmia. Neisser's bacillus is identical with the gonococcus, and is the bacillus of gonorrhœal ophthalmia.

If the Koch-Weeks bacillus were found in a case of acute ophthalmia I doubt whether the case could be diagnosed at once as acute Egyptian or granular ophthalmia, and even a follicular appearance of the conjunctiva does not mean trachoma. According to Fuchs the Koch-Weeks bacillus is found in violent cases also of acute catarrhal ophthalmia. Fortunately the treatment does not depend upon making a differential diagnosis, and as regards an intimate knowledge of these micro-organisms, it is, I believe, to a great extent of mere scientific interest, although they are of immense importance in the explanation of contagion and infection. They are natural phenomena, and their existence has to do with the laws of nature. The great therapeutic law of nature, the study of which is both scientific and practical, namely *similia similibus curentur*, is unaffected in its verity by the existence of these organisms.

Dr. DOUGLAS MOIR referring to the use of argentum nitricum recalled several instances in which much injury had been caused by it. He held that where an action of a caustic character was indicated, a milder drug such as sulphate of copper was preferable. Generally he found that severe local measures were not needed, and in the main relied upon constitutional treatment, together with collyria of such medicaments as euphrasia, hamamelis or calendula.

Dr. C. W. HAYWARD had never had a case of ophthalmia neonatorum in his practice, and he attributed this total exemption to his invariable practice of personally attending to the

washing of the baby's eyes, so soon as the labour was safely over.

Dr. DRURY regretted that so little had been said regarding the constitutional element in ophthalmia, which he considered one of the most important factors in connection with the disease.

Dr. CASH REED mentioned a curious custom prevalent amongst the rural population in Devonshire, of applying "fasting spittle" as a remedy for eye troubles. No sound inference relative to the value of the internal administration of *argentum nitricum* could be arrived at in cases such as had been cited in the paper in which, together with the internal medication, frequent use of boracic acid lotion had been resorted to.

Drs. MEEK, HAWKES and WATSON also spoke.

THE ELECTRO-CAUTERY IN CHRONIC THROAT DISEASES.¹

BY ALFRED MIDGLEY CASH, M.D., C.M. EDIN., M.R.C.S.

Physician to the Torquay Homœopathic Dispensary.

IN treating of the electro-cautery as a remedy against certain throat affections I must guard myself from being misunderstood. I do not wish to advocate the neglect of other methods, such as the many valuable medicines found in our special pharmacopœia, the use of certain applications, as gargles, sprays, compresses and inhalations, including the recent and useful aerizer, also the general hygiene and special care of the voice and throat. I have used them all with advantage and shall hope so still to use them. But when we have done our best with all these means there remains a certain residue of patients still uncured and incurable unless something that "will touch the spot" (like a certain much-belauded ointment) can be found to carry improvement perchance on to cure. That something I have so often found in the electro-cautery that I venture to-night to bring the subject before the members of the British Homœopathic

¹ Presented to the Section of General Medicine and Pathology, February 7, 1901.

Society in the belief that others who have not already done so may try it in their throat cases and find it, as I have, a potent and reliable weapon against these diseases.

Throat affections, possibly owing to our humid and variable climate, are legion in their number. They commonly initiate nasal and aural troubles, spreading by direct continuity. They are frequently inveterate in their character and prove obstinate to ordinary treatment. They are liable to relapses under many conditions, particularly so when the general health falls below par. Their presence keeps up a condition of permanent ailing and is a perpetual menace to anything like consistently robust health. They are associated with certain constitutional dyscrasiæ as the rheumatic, gouty, tubercular, scrofulous and syphilitic, and under these circumstances are apt to be specially rebellious to treatment.

Under medicine and general hygiene their progress is often disappointing. Relapses are the rule, and a condition, temporary in the first instance, very commonly recurs and tends to become chronic. Throat affections are particularly susceptible of improvement under favourable climatic conditions. Torquay being located in the south-west of the country, having a mild, sheltered position, screened from north and east winds over its chief area, and having a sunshine record almost unequalled and a variation of temperature of the narrowest, many throat invalids come naturally there for the advantages of the climate.

Of the various forms of pharyngitis one thus meets with and is most frequently called upon to treat, the following may be enumerated:—

- (1) Chronic parenchymatous hypertrophy of the tonsils.
- (2) Chronic hypertrophic pharyngeal catarrh or clergyman's throat.
- (3) Chronic follicular tonsillitis. The tonsils secreting plugs and sometimes irregularly cleft.
- (4) Varicosis of the tonsils and pharynx.
- (5) Elongation and irritation of uvula sometimes œdematous in character.
- (6) Plaques and lymphoid granules of pharynx, sometimes associated with post-nasal adenoids, sometimes exist-

ing alone, and more frequently as part of a condition of hypertrophic catarrh.

In addition to these I would name another class—one of general granular irritation of the fauces, possibly with little complaint of pain, but with a coexisting general constitutional debility, a sense of being almost always tired, and a weak, uncontrolled state of the vocal organs. As a matter of fact one seldom meets with these conditions singly. They may, of course, exist alone in any given case, but it is more usual to find several of them combined, as the same cause may affect the glands, the mucous membrane or the veins, giving in this way for example a tonsillitis, a clergyman's sore throat or a varicosis of the pharynx, which may all co-exist in the same case.

CHRONIC ENLARGEMENT OF THE TONSILS

is, at the same time, one of the commonest and one of the most important of these local conditions. Met with mostly in strumous and tubercular-constituted children it is very necessary in treating the constitution not to neglect measures for the local disease. While some have urged that only constitutional treatment is called for and that when this is done the child may be left to "grow out" of the local manifestation, we must never allow ourselves to lose sight of the fact that these large tonsils, whose life history coincides with the period of the child's development, will, by their presence, inflict serious injury on the health and will retard the growth mentally as well as physically to an extent which can never be made up for afterwards. Whilst we are waiting for the child to "grow out" of them they may cause deafness, retarded development in general bodily formation, deficient lung expansion, painful reflex neuroses, such as pain in the ears and gastric crises. Meanwhile their presence is a continual danger, as they offer a suitable area to which the micro-organisms of diphtheria and tubercle, &c., may be attracted and on which they may be cultivated. Energetic topical treatment is clearly required, and we shall best consult our patient's interest by combining this with

such medicinal and hygienic measures as may be indicated for the general benefit of the health.

Such applications as sprays, gargles and painting of the enlarged tonsils are all practically useless.

Cutting out the tonsils, as a rule, I must say I entirely object to, and have for years discontinued to practise. After this operation a partial result only is often attained. The tonsillar stump left is often uneven, irregular, or prominent in one part, and is still quite capable of giving trouble.

Then, whilst healing, it offers a raw absorbing surface, particularly objectionable in a food passage, and affords a site upon which infective micro-organisms may develop—as, for instance, diphtheria has been known to do.

Again, the operation is painful and alarming to the patient; hence frequently requiring the use of an anæsthetic.

Thirdly, we have to face the possibility of *hæmorrhage*. This statement has been combated, and bleeding after excision has been affirmed to be rare.

Unfortunately, however, it occurs, and probably we have all met with it. A case, but recently, has come to my knowledge where such was the severity of the hæmorrhage, occurring some hours after the excision and when all danger was deemed satisfactorily over, that had not a medical man been most fortunately in the house that night there is little doubt the child's life would have been lost.

Then we must remember, if severe hæmorrhage occurs, the tonsil is a part difficult to get at. To tie a bleeding vessel here is impossible. It is a spongy gland, abundantly supplied with blood-vessels. Five arteries from various large trunks terminate in its substance. We find such an authority as Treves stating, in his work on Surgery, that "the operation of removing the tonsils is often associated with free bleeding"; and other surgeons have recorded fatal results.

We cannot certainly know beforehand if any individual patient on whom we propose to operate may not have some one of these arterial branches of an unusual size distributed in the redundant parenchyma of the organ. Then, also, we

are close to the large vessels of the neck. The internal carotid has been before now wounded in ablating the tonsils. Which of us would care to face the possibility of having, at a moment's notice, to tie the common carotid artery in the neck for hæmorrhage, which might suddenly occur in so apparently simple an operation as cutting out a tonsil?

For the last fifteen or sixteen years, at least, I have employed the electro-cautery for the reduction of enlarged tonsils, and I do not remember a single case of the kind in which it has failed to give me a good result.

I admit it takes a little longer to do its work, as several applications are often needful; but, on the other hand, the patient is in a safe condition the whole time. Practised as I shall describe it, the patient is entirely out of danger, both at the operative moment and afterwards whilst healing is in process.

There is little or no pain attending on the application of the electro-cautery to the tonsils, for simple local anæsthesia is quite equal to removing entirely, or almost entirely, such momentary pain as would otherwise be felt. No raw absorbing surface remains in the throat as a danger to the patient while the sore is healing. Hæmorrhage is put out of court; such slight oozing as may occasionally be caused if the platinum cauter is too hot—not being worthy of the name; and even this need not occur if care be taken that the platinum is at a red—not a white—heat.

A better after-result is obtained than by cutting. No appearance of mutilation is visible in a throat whose tonsils have been carefully treated by the electro-cautery. They shrink up under its action into small innocuous bodies, incapable of mischief and affording little probability of recurring tonsillitis. The throat is thus permanently strengthened, and the whole system benefits thereby.

The *modus operandi* is as follows:—The patient being placed, if possible, in a good direct light, or, if this is not possible, having a beam of reflected light thrown on to the fauces by the forehead-mirror, the tongue is gently depressed with a broad glass spatula, and a spray of a 5 per cent. solution of beta-eucaine and hydrochlorate of cocaine,

in equal parts, played upon the tonsils to be operated upon. If the patient is nervous, a second application may be made. In five minutes the parts are usually sufficiently anaesthetised. The tongue being held down out of danger by the glass spatula, a flat platinum cauter is passed over it, and, whilst cold, is pressed laterally upon the prominent projecting body of the gland. The connection is then made by pressing a knob on the handle with the forefinger. A fraction of a second secures a sufficient eschar being formed, and the cautery is withdrawn.

A dull red heat, not a white heat, should be used. The strength can be easily gatged by testing the battery beforehand. Usually there is no pain felt, or, at most, only a slight prick, which scarcely alarms the most sensitive patient. I find that children readily allow after-applications, as the first one usually gives them confidence.

A slight smoke and odour of incinerated tissue is observed when the connection is made. A thin slight slough forms at the seat of the burn, which takes about a week to be thrown off. Thereafter, other applications may be made, and, if time is an object—as when children are brought for treatment in the holidays—both tonsils, if enlarged, can be touched at the same time. If possible, however, I prefer to treat only one at once. Rapid shrinking of the gland follows these applications, and goes on for some time after one has ceased to make them.

Take a case where there are two large globose glands which will, on examination, be seen to roll inwards. Two or three touches of the cautery will set up in them such a shrinking that the condition of the throat is entirely changed. The tonsils may be burned on the flat, punctured by the pointed cautery, or barred in regular lines over their prominent surfaces, according to the judgment of the operator. Whichever process is adopted, the result is the same; the tonsil shrinks, flattens, and falls back to the side of the pharyngeal tunnel. No disturbance whatever is caused by the operation, and, except in rough or wintry weather, the patient may go about as usual, and need not alter his usual habits. I commonly order a calendula

gargle to be used, and sometimes give a few doses of aconite or belladonna, according to circumstances. The following cases are fairly illustrative:—

H. W., aged 7. Shortly after a not severe attack of whooping-cough, from which he had with treatment made a good recovery, the boy was observed to be generally failing all round. He had a succession of bad naso-pharyngeal catarrhs with deep, hoarse, croupy cough becoming increasingly difficult to cure. He lost flesh and weight, and his parents became seriously alarmed about him. When they brought him to me, he was a pale, large-headed puny-bodied little mite, with gastro-intestinal troubles which had created fears of mesenteric disease. I found on examination he had huge globose tonsils, pitted on the surface, which on depressing his tongue rolled upwards and inwards so as almost to meet and block up the throat. I began with him at once a course of the electro-cautery treatment, making the applications first to the right and then to the left tonsil.

Prominent parts of the tonsil were first burned on the flat as above described, with the oval flattened cauter, and as the hypertrophy was great and much follicular disease co-existed, I used also the method of igni-puncture at intervals—introducing the pointed platinum cauter both up the crypts and into the substance of the glands. Steady, uninterrupted shrinkage was set up. The globose tonsils fell away into small unprojecting bodies and *pari passu* the health was restored. Six weeks later the child was entirely changed—a blooming, robust, active little fellow, not to be recognised for the small pallid creature he was on commencing treatment.

And I may say that this is five years ago, and since that time I have hardly required to treat him for this or any other ailment, his old frequently recurring catarrhs, which alarmed his mother by their croupy symptoms, having entirely disappeared.

L. R., aged 10, a tall fair girl of nervous sensitive temperament, was brought to me; her tonsils had been large for some time, and for three or four months the throat had been sore. On examination the tonsils were seen to stretch back to the pharynx, forming large tumours, which rolled together when the tongue was depressed. She often gets bad colds at which times she becomes deaf, and there is much sense of tickling and irritation in the throat. In the month of February she was put on electro-cautery treatment; the tonsils were touched with the platinum cauter chiefly by searing on the flat. First one and then the other were

so treated. They gradually shrank back and fell away to the sides of the throat, which became much better and ceased to trouble her. Eight months afterwards she came to see me and I find it noted in my case book: "Throat is opened beautifully, tonsils small and flat and lie back in place. She has now a wide throat with smooth, healthy walls; since last seen she has never complained of the throat once, and has lost all tickling and irritation."

In the following winter she passed through an attack of whooping-cough, a severe ordeal for her type of constitution. However the throat seemed to suffer but little, nothing in the nature of a relapse occurred, and one application of the cautery only was required the following spring.

This is three years ago; she has since developed into a fine, healthy girl of unusual physique and beauty.

J. D., aged 15, was brought to me with enormous hypertrophy of the tonsils. They were of the follicular type, with deeply marked crypts, and had been growing for years. He often has sore throat and bad colds, when he cannot sing and is sometimes deaf. The tonsils almost meet. He is a pale, tall lad, with distressed face and easily disturbed gastric functions. He has much irritation of the throat and severe cough, and phthisis, which is in his family, looks very like developing. I cocaineised the tonsils and with the ball-cautery touched the left thoroughly in several places. There was much sensitiveness of the throat, with copious secretion of mucus. Next time I punctured the left tonsil freely and seared the right one more slightly on the flat. Again I punctured both tonsils in several places. In a month from the first the tonsils were greatly reduced in size and flattened back to the side of the throat. The patient was greatly benefited, losing many of his old symptoms. This boy was a very satisfactory case; he was a miserable specimen when the treatment was begun. He came of a family deeply tainted with phthisis, and he himself presented a well-developed pre-phthisical picture. The regeneration of his throat, which treatment effected, changed all this and was the turning point in his history.

I have had many such cases as these, some of them associated with post-nasal adenoids, but more often tonsillar hypertrophy alone.

In the former case special treatment for the adenoids may be necessary, but this does not come within the scope

of this paper. In the majority of cases, however, the tonsils alone required treatment. In *adults* who have developed hypertrophy of the tonsils in later life, or who have continued to suffer from them since adolescence, electro-cautery treatment is also adequate for a cure.

In these cases the growths are apt to be firmer, having more of a fibroid consistence, containing a large amount of connective tissue. It is possibly owing to this circumstance that hæmorrhage after amputation is more liable to occur than in children. It has been thought that the vessels on section retracted less readily and were more apt to remain patent. I have always treated such cases with good results with the electro-cautery, but find it more often necessary to puncture the tissue here and there. In doing this it is necessary that the platinum point should be at a dull-red heat. In one case I met with, where the tonsil grew out into the pharynx almost like a peg, I passed the loop over it and amputated it with the incandescent wire.

In chronic follicular tonsillitis, with secreting crypts, I have had good results by first expressing the cheesy nodules by means of a director, and then, under a good light, introducing the platinum point into the crypts and clefts of the gland. In this way the tonsil will shrink and concentrate, hollows are reduced in size and depth, and secretion lessened or definitely stopped.

HYPERTROPHIC PHARYNGITIS, OR CLERGYMAN'S SORE THROAT.

This is another common and highly important affection. Can we cure it? Certainly we can; but we often fail to do so. The condition is rebellious, and all the more from the difficulty of securing sufficient rest for the voice in those who depend upon it for earning their livelihood. Here I have found the electro-cautery a most valuable means with which to combat this often inveterate condition. Why clergyman's throat, the special feature of which, as its name implies, is weakness or failure of the voice, should be benefited by cauterising the pharynx may seem at first problematical.

The benefit, as Macbride puts it, may be owing to a powerful reflex stimulating effect upon the larynx.

At any rate, in these pharyngeal cases, we find, co-existing with the laryngeal weakness, a condition of enlargement and inflammation of the lymphoid tissue in the mucous membrane of the throat.

In a good light we are able to see, in a pronounced case, longitudinal bands or plaques on the posterior wall of the pharynx, having the appearance of little patches of red velvet laid upon the surface of the mucous membrane.

We now carefully anaesthetise two or three of these patches, which we may do either by spraying the throat with a 5 per cent. mixed cocaine and eucaine solution, or still more completely by holding firmly a tampon of absorbent wool saturated in the solution against them by means of a pair of throat forceps for about a minute.

This will cause the plaques to lose their red injected appearance for the time being. A conveniently-shaped cauter to use is the *stirrup* shape, either rounded or flat. This should, as stated above, be first applied accurately to the patch to be treated, and then the current turned on. A firm touch or two will shrivel each patch, and if the patient is steady, two or three, according to the size, may be destroyed at one séance.

It is better to apply the cautery slightly, as it is not desirable to do more than simply incinerate the hypertrophied tissue. If, after the slough separates, we find some prominence remaining, we can easily give it another touch.

Only experience can enable us to decide and can give us the *tactus eruditus* to do enough and no more.

Deep burning of the throat is strongly to be deprecated. The slough separates in about a week, and for some time afterwards a shrinking of the surrounding redundant tissues occurs, so that if we do not see the patient again till some weeks later we are often able to observe that the throat is paler and less swelled, in fact, more benefited than it appears to be within a few days of the cauterising. Until the sloughs have come away it is well not to re-apply the cautery, and

during this time, while the throat is apt to be sore, a gargle of calendula should be used and the patient advised to avoid exposure to cold and the undue use of the voice.

Mr. A. B., aged 47, first came to me about twelve years ago. He had a most severe condition of chronic hypertrophic pharyngitis with large velvety plaques, growing longitudinally on the mucous membrane of the fauces. The tonsils were deeply cleft and irregularly fissured in all directions, with much secretion of offensive plugs. In addition to all this there was serious co-existing nasal trouble, chronic nasal irritation, stenosis of nostrils with deflected septum and enlarged inferior turbinals. Suffering from almost constant catarrhs of the pharynx, his throat was when he first came under treatment in a condition which may fairly be called dreadful. One of his parents, a brother and sister, all dead of consumption, and he looked very like going the same way.

He has now been under regular treatment for about ten years, medicinal and by the electro-cautery. With the latter the tonsils were smoothed down, pharyngeal plaques destroyed, inferior turbinals cleared back and a breath-way opened through the nostrils. Catarrhs are now comparatively rare. He has developed into a strong hearty man, with a constitution renovated. This is largely owing to improvement of local conditions, for which the electro-cautery is responsible.

Mr. C. F., in the artillery, home on furlough, came to me for treatment of the throat. The pharynx showed plaques of hypertrophied granular mucous membrane. He has chronic throat irritation with cough and hoarseness, which prevents him singing; has a red granular tonsil, much mucus secreted in the throat, especially at nights. I anæsthetised the throat with the eucaïne spray and with the fine stirrup cauter destroyed five plaques on the posterior pharynx. Complete anæsthesia was established in four minutes and no pain was felt. Professional exigencies obliged his absence from home and interrupted treatment just as it had been begun. In seven weeks he returned. In the course of the next three weeks I several times touched the throat with the electric point. The irritable areas were thoroughly treated, and with the tonsils were smoothed down. The throat got clear and he began to feel it much less irritable, and the voice became stronger and clearer, of which he could judge well by his capacity for singing, of which he was very fond and which

before commencing treatment had become almost impossible. His own report of himself was "infinitely better."

Irritation and weakness of voice and throat. Partial aphonia, chronic cough, abnormally long and trailing uvula, varicosis of the pharynx.

Mr. W., an instructor at the Dartmouth Naval College, has to talk continually many hours a day. Lectures have become extremely difficult from the cough and throat irritation when he uses his voice. Tortuous veins course over the right anterior pillar, he constantly hawks and spits with the sense of a lump in the throat. With the platinum point I destroyed the blue venous knots and burned back the long trailing uvula from the tip. His attendance was rather spasmodic, only coming irregularly, but he got much better, the voice gained power, and the violent paroxysms of cough were much reduced. When seen six months later his throat was remarkably improved. This gentleman was an inveterate smoker, as are so many of the throat cases amongst men, and the difficulty is to get them to abstain from the habit which unquestionably keeps up the irritation and minimises the success of treatment.

These will serve as types of this class of case; results are still better if the treatment is earlier begun. Some have disputed the power of an *elongated uvula* to cause cough and irritation. I have myself no doubt whatever of the fact. I have frequently seen irritable throat and often-recurring cough existing with, and kept up by, such a condition. Then after two or three applications of the electro-cautery to the tip of the uvula this will become rapidly shortened, when the cough will disappear and the throat lose its former irritability.

One such case I treated had succeeded to a severe attack of laryngeal catarrh, in a gouty elderly gentleman. The cough and spasm persisted, and on examination of the fauces I found a uvula quite abnormally large and baggy. This I reduced with the electro-cautery, applying the flat burner to the tip of the organ. In a week or two the uvula became much shorter, cicatrising from its point and tightening up in its whole length. The throat, ceasing to feel the pendulous vibration against it, lost its irritability, and the rough, harsh cough shortly disappeared.

VARICOSIS.

The condition of *varicosis* and *thrombosis* of the *pharynx* is one which, I think, has been rather overlooked in some of our works on the throat.

It is very apt in certain constitutions to supervene on common recurring pharyngeal catarrhs, and is a source of much irritation and cough. It introduces catarrhs which run down into the larynx, causing weakness of the voice, with hoarseness and injury to all fine vocalisation, and is particularly detrimental to singers and elocutionists. A vicious pathological circle is thus established which may be exceedingly difficult to remedy.

The pharynx is seen to have on its surface meandering veins giving a seaweed-like appearance, and sometimes dark venous knots of solid or partially solid thrombosis. As to treatment, little good can be done for this condition except by the electro-cautery, and happily this is sufficient for its cure. The effect of its application is striking and complete. A fine-pointed platinum cauter is used, the patient being seated in a good light, for accuracy and nicety are required for the operation; the tongue is held well down with the broad glass spatula, the pharynx having been previously anæsthetised. The posterior wall being by these means brought well into view, a platinum point, cold, is now placed on the vein to be operated on, and the connection made. Instantly the vein is incinerated and destroyed at this point.

A fraction of a second is enough; no more pressure should be used than just enough to destroy the vein, as it is not desirable to burn deeply into the tissues beyond. If there are several anastomosing veins, it is well to make the cauterisation at several spots, so as to control the general venosity of the part. In a day or two afterwards, if the throat is examined, it will be found that the venous radicles have entirely or largely disappeared. In a few weeks the whole pharyngeal membrane will be markedly different, the general or patchy congestion having faded away.

The puffiness and angry redness or lividity also goes down, so that the whole of the throat assumes a more

natural appearance. With this there is marked improvement in the general health. The cough is much lessened, and sometimes disappears almost at once. There is a sense of relief from the constant uneasy feeling in the throat, with its many accompanying sensations; there is an amelioration of the laryngeal distress, and the voice recovers its timbre and control.

This varicosis of the throat is frequent in gouty constitutions and in those who live well, leading indolent lives and addicted to the pleasures of the table.

It is connected with recurring gastric attacks and may be part of a chronic dyspepsia, needing attention to be directed to diet and general regimen. It is responsible at times for hæmorrhages, which alarm the patient, creating fears of consumption.

Varicosis and thrombosis of the pharynx, pharyngo-laryngitis—partial aphonia.

Mrs. S., aged 35, has suffered from her throat for years and been for a long time under the care of a well-known specialist. Has a constant sense of a lump in the throat, thyroid cartilage tender, colds and coughs prevalent, and at times she coughs up a little blood. Fauces very red and inflamed, covered with wandering veins, here and there showing knots of thrombosis, mucous membrane angry, and feels sore and dry. After careful medical treatment for about three weeks she had made some progress, but though less angry, the throat was still irritable, she continued to catch colds and get relapses in the throat. I therefore swabbed the pharynx with the eucaine solution, and with the electro-cautery point carefully destroyed two angry venous knots on the surface of the mucous membrane. At her next visit the throat was markedly improved, both in appearance and by her own sensations. It ceased to be an active element of evil, being in her own words, "wonderfully better."

Varicose pharynx, co-existing in an invalid with dilated heart and chronic bronchitis.

She has a blue congestive appearance with constant harsh cough lasting for hours, causing dangerous back pressure, and during the attacks she gets deeply cyanosed and exhausted. After failure of many remedies to relieve her I used the hot platinum

point with which I touched and shrivelled some large venous knots in her throat. She had no pain from the application; the cough was quieted. She felt great relief at once, and a much quieter night followed. On examining the throat four days later all the enlarged veins were seen to have disappeared. She expressed herself as "greatly relieved."

Here we have a large proportion of this useless, dangerous and distressing cough rapidly dissipated as the effect of the galvano-cautery treatment.

This poor invalid had enough to bear from irremediable disease, without the infliction of such an evil as this which could be dispensed with. She was eager for the cautery treatment and grateful for the relief it afforded her, a relief which could hardly be over-estimated in such a condition.

Further illustrations might be adduced, and cases given of such forms of chronic pharyngitis as the *general granular* and that distinguished by *lymphoid buds*.

But this paper has extended, I fear, beyond the usual limits. Enough, I trust, has been said to testify to the position of the electro-cautery as a safe and efficient remedy in inveterate and otherwise incurable forms of chronic throat disease.

Mr. DUDLEY WRIGHT said Dr. Cash was to be congratulated on having made out a very good case from his point of view, on the treatment of certain conditions of the pharynx with the electro-cautery. His own (Mr. Wright's) experience in that direction with the same means had not been a very happy one. When he first took up throat work he used the galvano-cautery for pharyngeal conditions and for hypertrophy of the tonsils, for which Dr. Cash had so largely used it, but the benefit was not so marked as by the use of the guillotine. Moreover, he did not find the cautery by any means a painless method of treatment. Possibly Dr. Cash had not applied the cautery so deeply as he (Mr. Wright) used to, though he could not detect any difference from the description. He had not been content with merely searing the surface of the tonsils, but punctured them in every case, and the proceeding was very painful to the patient in spite of the fact that he rubbed in 10 per cent. of cocaine—Dr. Cash stated he used it of 5 per cent. strength. In certain cases he (Mr. Wright) injected it. The whole treatment did not

favourably impress him. The tonsils did not shrink regularly when they did shrink, and there was a great deal of reaction after the punctures had been made. In one case he could trace an acute attack of middle ear disease to the procedure. It was true that hæmorrhage occurred after removal by the guillotine. In one case there was alarming bleeding four hours after the guillotine had been used. Still, he preferred the latter instrument to the cautery, and if it were used with care there was no reason why complete removal should not be effected, without leaving any projecting pieces. There was, however, one condition which he considered was very much better treated by the galvano-cautery than by the tonsilotome, namely, where there was a ragged condition of the tonsils due to enormous crypts; these cases he made a practice of cauterising. In certain cases of varicose veins he had found it satisfactory; but, speaking generally, the more experience he gained the less he used the galvano-cautery within the mouth at all. Granular pharynx was often due to nasal stenosis or the abuse of tobacco, and was modified by reducing the amount of tobacco consumed and a restoration of breathing through the nose. Especially in the clergy and singers, the main point was to correct an abuse of the voice, because in nearly every case there was improper voice production. A course of voice production under a master would go a long way to cure the throat and get rid of the necessity for the use of the cautery at all. It was more than probable, however, that under the circumstances in which Dr. Cash saw his patients the use of the electro-cautery was the right treatment. Still, the cases he (Mr. Wright) had seen and treated in London had been most benefited by the other treatment.

Dr. DYCE BROWN joined in thanking Dr. Cash for his interesting paper, which had been rendered much more so by hearing the counter view which had been expressed by Mr. Dudley Wright. His own treatment of cases of chronic pharyngitis and granular pharynx formerly consisted in the use of strong local applications, sometimes of nitrate of silver; but latterly he had given all those up in favour of pure glycerine. Dr. Cash had mentioned that the throat condition might be associated with forms of stomach disorder. His (Dr. Dyce Brown's) experience was that underlying every chronic throat case there was something wrong in the constitutional condition. Of these a gouty state, a gastric and general mucous catarrh, and a sluggish action of the skin might be mentioned. He found nothing stronger was required for local application in such cases than pure glycerine,

applied with a brush once a day. He trusted for the rest to internal homœopathic treatment, suitable dietary and Turkish baths.

Dr. WILLS thanked Dr. Cash for his paper. He believed that many gentlemen who lived in more stimulating atmospheres did not know what Dr. Cash and others who lived in relaxing atmospheres had to encounter in the matter of local conditions. In Bath one often found that whereas they experienced considerable benefit from attending to people's livers, as mentioned by Dr. Dyce Brown, still they found it absolutely essential to combat the local conditions as well. He had had some experience of those conditions in conjunction with his partner, Dr. Wilde, who was a representative of treatment by the cautery, while he (Dr. Wills) preferred the guillotine. He had generally handed over to Dr. Wilde the cases where the tonsil was rather deeply set between the pillars, and where the condition was diffused. Those were very well treated by the electro-cautery, but he preferred the guillotine for the ordinary class of case. With regard to clergyman's sore throat, the adherence to homœopathic remedies in conjunction with the local application of glycerine, or glycerine and tannin, or in more obstinate cases, Lugol's solution, or even the liniment of iodine, was sufficient, but always accompanied by the indicated remedy.

Dr. MUNSTER said, referring to the remark made by Dr. Cash that an elongated uvula set up cough, he had had experience of two such cases in old gentlemen with emphysema. There was a distressing cough night and day in both cases, and the patients got very little sleep in consequence. In each instance the uvula was amputated, and in both there was great relief from the cough.

Dr. CASH, in reply, said he was very much obliged for the criticism which had been bestowed on his paper. He was glad to have the benefit of Mr. Dudley Wright's experience, which he knew was very large in the treatment of throat affections. His results were rather strikingly different from his own, which he was at a loss to account for, except on the ground that he had a better climate for his patients afterwards than had Mr. Dudley Wright. The statements he had himself made in his paper correctly represented his results during the past sixteen years. He had found searing of the crypts extremely useful in those large loose conditions of the tonsil, where one might almost seem able to unravel the tissue; the introduction of the cautery produced a most satisfactory result. He agreed with Dr. Dyce Brown that the constitutional condition must be thoroughly

attended to in such cases; they could not afford to neglect that. But his paper was upon treatment by the electro-cautery. In reference to Dr. Munster's remark,—in the last of his (Dr. Cash's) related cases, an emphysematous one, great relief followed shortening of the uvula.

GOUT.¹

BY JAMES SEARSON, M.D.BRUX., L.R.C.P., L.R.C.S.I.

THE custom holds of opening a medical paper by paying the auditors a delicately phrased compliment.

I feel I may in this instance venture to reverse the record by paying one to myself for possessing the courage, if not the audacity, necessary for the introduction of the theme, the title of which heads this paper. For I find myself unable to say which strikes me most with awe, the vastness of the subject or one's temerity in proposing to make any contribution to its discussion.

To the consideration of "gout" most medical pens have at one time or another lent themselves, gladiators have entered the arena in its favour, the subject itself has been gazed at from every point of vantage, and yet somehow one rises from its consideration feeling that it has been argued more or less in a circle, that the last word concerning it has not been uttered, and that leaving fine phrases aside it may be possible to put in a nutshell all that, for practical purposes, need be known regarding the causation and prophylactic treatment of gout.

My contribution to the discussion which is, I believe, to follow this paper, shall therefore be brief and I trust practical. I have no intention of travelling over the entire range of the literature of the subject—I rather desire to give a résumé of the later teaching regarding its causation, and to put into words from the gathered opinions of those who have gone before, and our own practical experience, the

¹ Presented to the Section of General Medicine and Pathology, February 7, 1901.

answer to a patient's hypothetical question, "Can gout be avoided, and, if so, how?"

What then is gout?

I would venture the following definition:—"A morbid condition characterised by the presence of an undue amount of effete matter in the blood and tissues, which effete matter gives rise to local arthritic lesions and general constitutional disturbances." To this definition all the controversial forces would, I think, subscribe. They would probably go further and say with Sir Dyce Duckworth that in acquired gout the toxæmia arises from the digestive and excretory organs becoming overloaded.

If we leave the arena of common agreement we wander into the region of nebulæ formed by the conflicting hypotheses advanced as to the causation of gout, as witness the following theories which have from time to time been advanced:—

(a) Uric acid compounds as mechanical irritants to joints and tissues.

(b) Uric acid compounds as toxins circulating in blood stream.

(c) Degenerative changes in tissues as primary cause, such changes not being caused by urates.

(d) Nerve disturbance the primary cause of gout.

Much interest has of late years centred around Haig, whose painstaking and helpful work has secured general approbation, and Luff, who has donned the mantle of Garrod and Roberts, and fortified his position by some original test-tube experiments which he claims are to be taken as accurately representing vital processes as carried on in the human body.

The clever argument of Haig, much as it commands our sympathy, and helpful as it undoubtedly is to clinicians, is unfortunately deprived of much of its force by what is now conceded to be the fallacious tests he adopted in the quantitative estimation of uric acid. Luff's exposition must therefore, I imagine, be taken as the latest and most authentic pronouncement as to the causation of gout from the purely technical point of view, and I would therefore, at the risk

of being accused of going over well trodden ground, ask your indulgence while I present a short synopsis of Luff's methods and conclusions.

After careful consideration Luff gives it as his opinion that a salt of uric acid is the *materies morbi*.

He points out that uric acid does not and cannot exist in the blood in the free state under any conditions whatsoever, and that when it is present in that fluid, it can only be in the form of one of its salts.

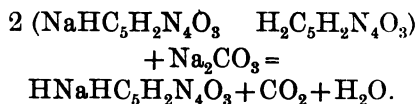
The formula for uric acid is $H_2(C_5H_2N_4O_3)$. It forms the three following classes of salts:—

(1) The natural urates in which a metal takes the place of all the displaceable hydrogen, as $Na_2C_5H_2N_4O_3$, the neutral sodium urate.

(2) The biurates, in which a metal takes the place of half the displaceable hydrogen, as $NaHC_5H_2N_4O_3$.

(3) The quadriurates, in which a metal takes the place of one-fourth of the displaceable hydrogen of two molecules of uric acid, as $NaHC_5H_2N_4O_3$, $H_2C_5H_2N_4O_3$, or which, in other words, is a molecular combination of sodium biurate with uric acid.

Only the two latter salts can exist in the human organism; the sodium quadriurate, being an unstable body, unites with some of the sodium carbonate of the blood to form sodium biurate, thus—



The sodium biurate, produced in larger quantities than the fluids of the body can make use of, becomes deposited in various structures in the crystalline form, and this deposition or precipitation of sodium biurate, by causing irritation and inflammation of the affected tissues, is the cause of the gouty paroxysm.

Luff considers that uric acid is produced from urea, and only in the kidneys, and as a result of some antecedent affection of those organs, and that its presence in the blood in gout is primarily due to its deficient excretion by the kidneys.

In studying the literature of gout, one is profoundly struck by the fact, that while the theories as to the causation of gout differ as widely as the suggested remedies, on what may be called the dietetic and hygienic points the theorists appear to be in general agreement.

Thus, as regards the preventive treatment of gout, Luff states that (a) the mineral constituents of meat diminish the solvency of sodium biurate, that is, lead to their precipitation, and that it is therefore quite possible that the well-known influence of excessive meat eating on the hastening or maturing of an attack of gout, may in part at least be due to the action of the mineral constituents of meat. Also that (b) wines and beers hasten an attack of gout, in great part because of their effect on the metabolism of the liver; and (c) that the mineral constituents of most vegetables increase the solubility of sodium biurate and so lessen their tendency to deposition, and also in several cases delay for considerable periods the conversion of the sodium quadriurate into the biurate.

Haig, as is well known, advocates (for quite different reasons) abstention from meat, increase of vegetables and fruit diet and a lessening of wines, &c., and so although his conclusions are arrived at differently, he and Luff are at one in these recommendations. All authorities advise greater exercise, and Garrod says that Cullen remarked that "Gout seldom attacked persons employed in constant bodily labour, or those who live much upon vegetable diet."

Sydenham said: "Whenever I returned to my *studies*, gout returned to me."

Haig says excretion of uric acid is greater in summer than in winter, and Sydenham speaks of gout as a winter disease. A labouring man has, so to speak, summer all the year round. His exertion keeps the skin constantly active, he therefore excretes uric acid freely, and retains but little in his body, and so he but rarely suffers from gout, and this almost without regard to his diet.

Garrod says: "Gout is undoubtedly less prevalent in hot than in temperate climates."

Luff says: "Cases of gout are much less frequent now

than they were in the days of Sydenham ; this is mainly due to the greater temperance in eating and drinking which prevails in the present age, and in part no doubt to the spread of athleticism and to the development of outdoor exercise."

It appears to me, therefore, that we may, for practical purposes, leave aside for the moment the purely academic questions which are involved in the gout controversy, and in answer to our hypothetical questioner, "Can I avoid gout?" we may honestly answer, Yes.

"What! even though there is a distinct history of gout in my family?"

Yes! Hereditary predisposition may be a factor, but, if so, it is a minor one.

"What lines, then, would you suggest should be followed?"

The lines of *simple living*.

First, as regards food, take sufficient for the body's requirements, and no more; then let your meat food be moderate in quantity. Eat fruits and fresh vegetables, spinach, sprouts, greens, &c. Avoid wines and beers, or be very careful in their use.

Then take regular physical and mental exercise, the former especially, as the mind may to some extent be left to take care of itself. Among the physical exercises, walking is, in my opinion, one of the best, and it has the advantage of being accessible to all who are in fair health. Persons as a rule walk far too little. This especially applies to doctors; if you doubt it, a little self-examination and confession will reveal how many of us attain to the late Sir Andrew Clark's ideal standard of six miles a day.

Fencing is also to be commended as a physical exercise, as are also riding, cycling, rowing and swimming, and the addition in one's bedroom of a Whiteley's or Sandow's exerciser is not to be despised.

Lastly, the question of the bath comes in, and I think it is impossible for the goutily disposed patient to do too much bathing. The morning tub, cool or cold, and the subsequent rubbing, is an exercise in itself, and hot baths, vapour baths,

Turkish baths, and the wet-pack, are all to be highly and freely commended.

I have abstained from allusion to medicinal treatment, as it was not intended that it should come within the scope of this paper; but I cannot refrain from saying that I believe lycopodium in trituration to be a most helpful drug. I was led to prescribe it in such cases by the suggestive paper of Mr. Wilkinson, and although he has commendably explained that the tests used in the connection have proved to be unreliable, still my opinion is, so far as one may judge from mere results, that lycopodium is, as I have said, a helpful drug.

I fear my paper cannot but be regarded as very limited in its survey, and imperfect in its execution. I can only trust that its numerous and marked deficiencies may be more than neutralised in the subsequent discussion.

Dr. BLACKLEY agreed with Dr. Searson in thinking that the subject was a vast one and might easily occupy a whole evening in its discussion. It gave rise to endless differences of opinion, especially as they happened to look upon it from the point of view of "Haigites" or "Luffites." He had considerable respect for Dr. Luff's work; he knew that gentleman personally, and knew him to be a thorough chemist and a very accomplished physiologist. He (Dr. Blackley) confessed that he had not such a thorough acquaintance with Dr. Haig's books as he might have, but he had read many of his detached articles, and was bound to confess he thought them too enthusiastic; there was a very pungent *petitio principii* pervading them, and the conclusions were carried beyond their legitimate limit. He agreed that they had had too much of the uric acid theory lately. No doubt Dr. Searson was right in defining gout as a disease in which there was an accumulation of effete matter in the circulating fluids; but Dr. Searson wisely abstained from an attempt to define what that effete matter was. More than one substance was certainly circulating in the blood; the principal one which appeared to determine an acute attack of gout he (Dr. Blackley) thought was the quadriurate or rather the biurate of soda, its immediate derivative. Dr. Searson had said that the deposition of biurate crystals in the cartilages produced acute arthritis by their mechanical action, acting as so many minute

needles. But there was an endless array of phenomena brought about by the accumulation of effete matter in the blood, material which was undoubtedly of the same character as that which they knew to be present in gout; and with most of these cause and effect were not difficult to trace. He ventured on one criticism of Dr. Searson's recommendations as to therapeutics which he thought important. Dr. Searson was right in saying that gout was a winter disease; but his (Dr. Blackley's) experience in the treatment of gout was diametrically in opposition to Dr. Searson's in the matter of recommending a cold bath. He had found the cold bath productive of no end of harm in such patients.

Dr. SEARSON: I have not recommended the cold bath as a prophylactic treatment during the attack.

Dr. WILLS said he would like to confirm Dr. Blackley's remark about the cold bath. He was himself inclined to inherit gout, and he had been obliged to give up cold bathing when the weather got cold, for if he took a cold bath in such weather he had neuralgia. There was no complaint or combination of complaints—protean as it was—in which the general constitutional tendency had to be so closely studied as in gout. Those patients who visited Bath could be relegated to two separate classes: those who could stand baths galore, and those who had to avoid exhaustion of the control of the nervous function serving secretion and excretion. If the patient were exhausted by baths, a certain passive excretion by the skin could be brought about, but no acid material would be extruded, as demonstrated by testing the skin with litmus paper. There would probably be acid perspiration at first, but if the baths were pushed there would be no acid perspiration if exhaustion resulted. If the patient were then given a rest from the baths, the acid perspiration would reappear. One had to study the constitution of the patient, and, in a sense continue to build up while pulling down. By the use of a cold bath they seemed to paralyse the skin and destroy for the time its excretory capacity. The same might be said of aperients. Sometimes in commencing treatment with baths one met with stubborn diarrhoea of a very acrid character. It was wise not to check it, and the patient, after the diarrhoea, got very much better. They saw gout in so many forms at Bath that they realised the necessity of individualisation in each case.

Dr. SEARSON, in reply, said he had been misunderstood with regard to cold baths. He said "a cold or a cool bath as prophylactic treatment." He had great faith in getting the skin into a healthy condition and keeping it so, and nothing conduced

to that so much as the morning tub. Perhaps it should not always be a cold morning tub, but it could very well be a cool one. Failing that, a sponge over with water at 90° to start with could be given, and on successive mornings the temperature might be 85° and then 80°, so as to "temper the wind to the shorn lamb." He alluded to Mr. Wilkinson's paper. It was from that he got the hint as to lycopodium. But Mr. Wilkinson publicly stated that the results were not to be relied upon, because the test methods were fallacious. He had a very strong conviction that no one need have gout, whether they had a predisposition to it or not. Hereditary tendency to it could be overcome by rigid attention to diet, exercise, and bathing.

A CONTRIBUTION TO THE ÆTIOLOGY OF
UTERINE MYOMATA.¹

BY WM. CASH REED, M.D.

Vice-President of the British Homœopathic Society; Honorary Assistant Surgeon and Joint Gynecologist with Dr. Hawkes to the Hahnemann Hospital, Liverpool.

INTRODUCTION.

I HAVE for some years past been impressed by the fact that a considerable proportion of persons who are the subjects of uterine myomata are also the subjects of a condition of pulse which has hitherto escaped detection, or at any rate description, in this country. I refer to that which indicates what is known as *high arterial tension*.

The object of this short sketch is to try and show that this high arterial tension, when it occurs, is not merely accidental, and that in certain cases it is not due to conditions extraneous to the fibroid, but that it has some specific relation to the presence of the myoma.

In thinking the matter over the subject seemed such a small one, in spite of its importance, moreover my experience was limited to the observation of some forty cases, that I had

¹ Presented to the Liverpool Branch, February 14, 1901.

grave doubts whether the inquiry were one worthy your attention.

The result of this uncertainty was to induce me to formulate some questions—a copy of which lies on the table—and to send them to a few friends specially interested in gynæcological matters. Some, *e.g.*, Drs. Burford, Neatby, Ord and Hayle, have been good enough to furnish valuable information, and others have written to say that their investigations have not run on the lines of this inquiry.

I must mention here the name also of my friend, Dr. Briggs, through whom I have had access to many cases of uterine myomata at the Shaw Street Hospital for Women.

Permit me to say, however, once and for all, that none of the information obtained in response to the inquiries before you has found entrance to this short contribution. If my paper have any interest it must rest entirely upon what I have myself observed, and I now pass on.

I propose first of all to briefly narrate a case which I had the opportunity of closely watching for more than twelve months. In it, there existed a large fibroid, but no cardiac nor renal disease, and yet a markedly high tension pulse existed. I could discover no condition present which could account for this, except the myoma itself. Miss S. S. was found by accident to be the subject of a fibroid thirteen years ago. For twelve months or so before I saw her she had been an invalid consequent mainly upon the drenching hæmorrhages which occurred every month.

Severe phlebitis was present also in this case from time to time. The gravest feature, however, of the case consisted in the occurrence now and again of apoplectic attacks, characterised sometimes by an impairment of sight and hearing, sometimes by a paresis of left hand and both legs, and sometimes by temporary paralysis of the seventh nerve of central origin. The worst attack, however, was one which resembled epilepsy or eclampsia, at the outset. This was followed by a week of profound coma, which was succeeded by symptoms lasting some weeks, characterised by great violence of demeanour, shouting, breaking windows, spitting, &c. There was now general loss of power, and aphemia,

viz., loss of the memory of words, *e.g.*, Benger was pronounced "Menger," Mutley—the place where she lived—was called "Mufrow," "Migby," or "Moyses," and the name "Wicker" employed to designate that of Wesley. •

Thus we had a picture of profound central nerve disturbance, the lesion probably affecting essentially Broca's convolution. There was now *for the first time* some hypertrophy and dilatation of the heart associated with the arterio-fibrosis present, which latter had resulted in the easy rupture of the cerebral vessels.

The patient still lives, though, I need scarcely add, she is a confirmed invalid.

For the purposes of this paper and to point the moral, it is necessary for a moment to dwell upon the chronological order of events in the case. I have said that there was no kidney mischief, nor, except as a *late* manifestation, any cardiac disease.

Freedom from the former was carefully ascertained by the absence of albumen, and the presence in normal proportion of urea, moreover there were no tube casts of importance. The cardinal point in this case was, that underlying all was a prolonged, "tangible" hæmorrhagic drain, producing a marble whiteness of the skin, and blanching of the mucous membranes. For several years this had gone on, and was practically the only sign of importance: of how great importance it was, the sequel shows. Its gravity was, and I am sure this is frequently the case, unrecognised. The anæmia, as an index of portentous events in these cases, is I am sure frequently overlooked or at least minimized. During the several years it existed it was doubtless initiating the arterio-fibrosis which supervened, on account of the defective blood supply to the vasa vasorum. Then followed arterial rupture and probably also thromboses, and finally the hypertrophy and dilatation mentioned. It may be asked, why attribute such serious effects to the anæmia alone? The answer is that this was the only outward and visible sign of disease which for years existed. The other conditions were secondary to it, and as if to make of this proof more positive, it is certain that when the profound anæmia had

been overcome (mainly by a very free curettage of the uterine cavity) the patient, though looking almost well, had the worst apoplectic attack of all.

The typical high tension pulse tracing from this case, taken by Dr. Byres Moir with a Dudgeon's sphygmograph, is exhibited as No. 1 of this series.

THE DEVELOPMENT OF FIBROIDS.

Arising naturally out of the foregoing, and as a further comment upon the case, this seems a fitting place to glance, though quite briefly, at the question of the *development* of uterine myomata. At the outset, however, one must state that it is very obscure, and the inferences are I think problematical. There is no doubt, however, that certain data exist which tend to connect very closely the histogenesis of fibroids with changes which are essentially *vascular*; e.g., Klebs maintains "that they are due to a proliferation of the connective and muscular tissues of the blood-vessels." Kleinwüchter in the *Frauenarzt* of September, 1894, refers to the researches of Rösger as confirming a theory of his own regarding the development of fibroids. Essentially it is, that the walls of the uterine vessels, and the uterine walls themselves, are developed from one and the same foetal structure, and he maintains that myomata are originally developed from the muscular coat of the uterine arteries. Further, he observes that the action of the muscular fibres of the uterine walls is directly designed to influence the blood supply.

From the above considerations the conclusion would seem warranted that when some factor tends to disturb the balance of the circulation in the uterine vessels and the uterine walls, aberrant action ensues, which results in the form of neoplasm now under consideration.

I now refer to the *importance of fibroids*.

Probably there is little in medicine or surgery which has created more controversy than the importance, as regards the patient's welfare, near and remote, of uterine myomata. Some look upon fibroids as of no more importance in the

economy than, say, an encysted bullet might be, whilst others regard them as embodying in themselves the very sentence of death to their host. The first, or optimistic view, is one which is adopted by those whose vision is bounded by a very near horizon, and whose estimate of the remoter possibilities, I might almost say, *probabilities* of fibroids is not according to clinical history. Of this I have something more to add shortly. The second, or pessimistic view, is one which can with as little justification be maintained, for the logical outcome of it is the adoption of surgical measures in well nigh all cases, and this, to my mind, is clearly unjustifiable. I have purposely said nothing about remedies as such, because it is foreign to the inquiry intended in this paper, not because it is one which is, I think, barren of results.

It must be obvious to all who take an interest in this particular branch of gynæcology, that women suffering from uterine myomata are essentially *short lived*. There are, of course, plenty of instances to the contrary, but it must be borne in mind in forming a conclusion, that the numerical equivalent of those who succumb in the earlier years to the stress of the situation, who, in short, drop by the way during the seasoning process, is very great.

The *life history* of a uterine myoma is a curious and very interesting one, and I hope to show that it is so, by reference to an instance or two, not of what I have read, but rather seen and handled.

The first case is one which tells of the spontaneous delivery of a pedunculated myoma, and death from shock.

Several years ago I was asked one day, on my rounds, to see a person who was said to be very seriously ill. I found a youngish woman in great distress with pelvic pain, dysuria, and the discomfort incidental to a profuse purulent and ichorous vaginal discharge. She had a high temperature, doubtless due to an autotoxæmia induced by the latter. She had one child a year old, and I was told she was not pregnant.

Almost presenting at the vulva was a hard globose body, of the consistence of a foetal head, but wanting in the characteristic

landmarks of the latter. On closer investigation this was found to be an impacted fibroid, completely jammed in the true pelvis, but tending to become procident. To make a long story short, the urgency of the situation was mitigated by suitable measures, and eventually the patient so far improved as to be able to walk a short distance. Now came the question as to what one's duty was as regards the present distress and the future possibilities. I wanted to remove the growth, but the risks of this were considerable, and a well-known surgeon whom she now saw advised against it, substituting the subcutaneous injection of ergot. Time went on, and no improvement occurred. She sought rest and change in the country, and strolling about one day some distance from home, the whole mass suddenly protruded between the thighs, and she died then and there from shock and syncope.

Had it not been far better to risk something, or even much, to have saved her from this?

The second case which I have to refer to is one of profound general breakdown due to the presence of a very large myoma, and shows essentially how the brunt of this is ill borne by the cardiovascular system.

It emphasizes also the importance of taking a comprehensive view of the life-history of the disease under consideration. The patient in this case was awaiting the removal of an immense fibroid by operation. Six weeks had been occupied in preparing the patient, by rest, nutrition, and hæmatinics, and the time seemed now ripe for relieving her of the burden. This it was intended to do the following day by very able hands. A final examination of the case was now made, when quite suddenly signs of cardiac failure manifested themselves. The face became cold, and other signs of collapse followed. Death ensued within a few hours. The *post mortem* revealed very extensive and complicated adhesions of the fibroid to viscera, and the heart was found to be "fatty and flabby."

Here was another ocular demonstration of a cardiovascular degeneration associated with fibroids, a condition which has been fully recognised in recent years at least by such authorities as Gottschalk, Freund, and Hoffmeier, in Germany; by Howard Kelly, in America; and by William Duncan and many others in this country.

My third case is one which shows the almost intolerable burden of a huge myoma, the removal of which very early in its life-history would have proved of inestimable value.

This patient I saw a few years ago with Dr. Barrow, then of Clifton. She was single and aged 55. For twenty years she had had the misfortune to be the victim of a fibroid, which had, latterly at any rate, become the subject of cystic degeneration. It was now of enormous size, occupying the entire distance from the ensiform cartilage to the pubes, and at the former site projecting shelf-like for two or three inches, whilst the rest of its contour was correspondingly conspicuous. The chief distress from which this lady suffered, apart from the *bulk* of the tumour, was from violent attacks (sometimes weekly) of stercoraceous vomiting. And now comes the curious and interesting point in the history of this tumour. Some ten years ago, when of course it was very much smaller, arrangements had been made by a surgeon for its removal and the particular day specified, when the surgeon quite suddenly died. Thus matters drifted, and some years afterwards she was seen by the late Dr. Greig Smith, who declined to operate on the ground of risk, and when I saw the patient surgical measures were of course still further out of the question. Dr. Barrow tells me that recently the patient died worn out by long-continued suffering. How much better to have taken the risks at an earlier date.

I will now touch upon what may be termed *the close of the life-history of a fibroid*.

It is frequently said that myomata "dry up" or "shrink" at the menopause. I think an error is liable to creep in here. It is true that the stress of the symptoms is abated, and sometimes nullified, at this period of life, by the natural involution of the sexual apparatus which takes place then, and which extends its influence also to the neoplasm. This, in like manner and *pari passu* with the other metamorphoses incident to this epoch, undergoes senile atrophic changes. At least this has seemed the explanation of sundry cases I have watched.

In spite of this, however, a great authority, perhaps the greatest in this country, Mr. Bland Sutton, goes so far as to say that the disappearance of a myoma, in the sense of its "drying up," at the menopause is "an event almost as rare as the advent of a comet!"

I have seen, at the Berlin Frauenklinik, instances of calcareous degeneration of fibroids and there, as elsewhere, unfortunately, instances also of malignant change, chiefly sarcomatous.

That, however, which seems to me of more frequent occurrence in the latter days is a *necrosis* which may be mistaken for malignant change, but which lacks the profound lethal characters of the latter. This necrosis is characterised by a very offensive and profuse discharge per vaginam, and in one case I curetted the uterine cavity for this symptom alone, regarding it as portentous, and the patient did well. Two other cases I have known, both of true necrosis, one terminating the life of the patient, and the other threatening to do so in the near future.

I now refer to my *fourth and last case*, seen only a few months ago, because it tends to emphasize the desirability of taking a wide survey in any given case of fibroid.

This lady, some years past the menopause, was the subject of a very large myoma, which latter was apparently responsible for symptoms which were causing some uneasiness. Essentially these were gastro-intestinal, the patient having very little power of digestion and assimilation, and being troubled by diarrhoea and frequent vomiting. Marasmus was marked, but the patient had for years been exceedingly thin; the wasting, however, was found to be progressive. Underlying all this she was the subject of persistent tachycardia, associated formerly with an enlarged thyroid. A tracing is given of the pulse, and is on the table. I could not feel satisfied that the fibroid was alone responsible for the symptoms, or should have advised removal. On making a most careful rectal examination one day, I was sure that some portion of the pelvic mass was of a different consistence from that appertaining to the fibroid which occupied the pelvic basin. The part referred to was softer and seemed dissociated from the myomatous mass. Here then was the secret of the downgrade of this patient, who in a week or two afterwards died, doubtless from the malignant disease present.

CONCLUSIONS.

Since commencing this paper a curious, and perhaps unusual, experience has befallen the writer. That which I

started to try and prove has loomed less as a *definite* factor than was anticipated. In one sense this is a source of congratulation and in another of humiliation. Of congratulation because it is, I believe, usually considered that an inquiry which is really scientific is beset with contradictions and doubts, and hence the inference is in some sort consoling! Of humiliation because I thought to have found more cases of fibroids indigenouſ to Lancashire, which would repay investigation, with regard to pulse tension. My friend, Dr. Hawkes, has kindly done what he could, but his large and valuable mass of clinical material, the result of years of hard work, requires focussing for *utilitarian* purposes.

Although, as stated at the outset, I am indebted to two or three friends for their views on this subject, yet I have avoided all reference to them, or influence by them; otherwise the conclusions shortly to be referred to might have been amplified. I preferred, however, that these, imperfect as they are, should stand or fall on the merits of the forty or so cases stated at the outset as under review.

Before coming to the "conclusions," however, it is necessary to remind ourselves of what is typical in a sphygmographic tracing of *high arterial tension*. It is essential also to refer to a few of the accepted canons of high tension pulse.

With regard to the first, *the type*, Broadbent says we have an "upstroke of a faint inclination forwards, a round or flat summit and a gradual decline without dicrotic notch."

How far the tracings here shown conform to that type you will judge.

With regard to the second point, the *conditions* which are accepted as contributory to the "high tension" pulse, a passing reference is necessary to a few of them.

Those which have a bearing more or less close upon the subject in hand are *four*, viz.: (1) Capillary resistance, associated with imperfect metabolism, and occurring conspicuously, of course, in cases of renal mischief. This latter cause I have, however, carefully excluded. (2) In pregnancy high tension is observed. (3) In anæmia also, and (4) In constipation.

Those which have no bearing upon the subject, *e.g.*, digestion, migraine, nervous erethism and the like, need not be referred to further.

Conclusions.

(1) High tension is a frequent, but not an invariable accompaniment of uterine myomata.

(2) It is, I think, more marked in the soft than in the hard variety of this disease.

(3) Fibroids are under certain conditions *excitants* of high tension.

(4) The removal of a fibroid may alter the pulse tension materially, but the way in which it is altered is too inconsistent to form in the meantime definite conclusions.

NEED OF A COMPREHENSIVE DIAGNOSIS.

I wish, in conclusion, to say a word as to the position, as a pathological entity, which a fibroid holds in the economy, in other words to define its "sphere of influence" in any given case. To this end it is not, I think, too much to claim that a comprehensive diagnosis includes the whole of the following considerations, and having stated them, I conclude my paper.

(1) The size and connections of the myoma.

(2) Is it the hard or soft variety, or a combination of both?

(3) Is it primarily submucous, intramural or subperitoneal?

(4) Is it homogeneous or heterogeneous?

(5) Are there any indications of degeneration, and if so, of what?

As auxiliaries to deciding these points the following should, I think, always be done.

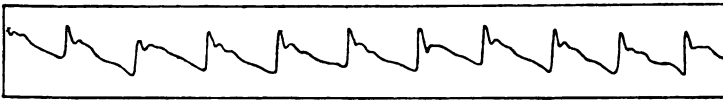
(1) The fundus oculi examined.

(2) The urine tested for albumen and tube casts, and especially should an estimation of the *urea* be obtained.

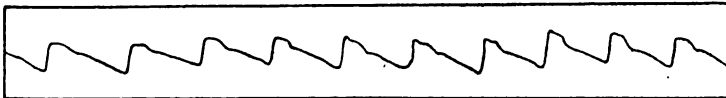
(3) The blood should be examined with regard to its depletion in red corpuscles. [Recent researches imply that there is a great deal to be learnt under this head with reference to fibroids.]

(4) A sphygmographic tracing should be made and *preserved* for future reference.

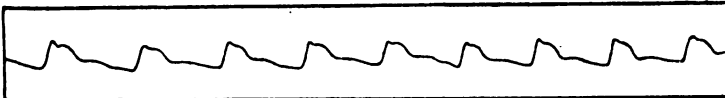
PULSE TRACINGS.



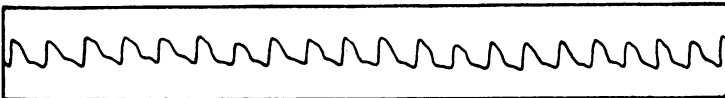
Typical average normal tension.



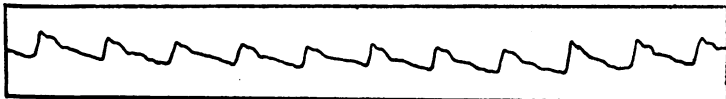
Typical average high tension. (Fibroid 7 or 8 lbs.)



Tracing from Case No. 1, in which no factor could be held responsible for the high tension except the fibroid.



Tracing from case of fibroid, malignant disease and tachycardia.



From case of soft myoma with moderate high tension.

SOCIETY NEWS.**ELECTION OF NEW MEMBERS.**

The following gentlemen were elected Members of the Society at the Meeting held on Thursday, January 3, 1901 :—

James Andrew Blair, M.D., C.M.Edin., D.Sc. (Pub. Health), L.R.C.P.Lond., of Windsor Terrace, Newcastle-upon-Tyne.

Wilfred Grantham-Hill, M.D.Brux., L.R.C.P.Lond., M.R.C.S. Eng., of the London Homœopathic Hospital, Great Ormond Street, W.C.

SUMMARY OF PHARMACODYNAMICS AND THERAPEUTICS.

“GATHER UP THE FRAGMENTS, THAT NOTHING BE LOST.”

DECEMBER, 1900—FEBRUARY, 1901.

PHARMACODYNAMICS.

Antitoxin.—“An article in the *New York Medical Journal* for December 1, by Dr. J. Edward Herman, of Brooklyn, is worthy of perusal. In it is found a careful dissection of some antitoxin statistics. The doctor argues that statistics prove conclusively that the death-rate during antitoxin years is higher than during the years previous to its introduction. He styles antitoxin the ‘serio-comic’ of medicine, and advises that we do not blindly follow bacteriological enthusiasts.”—*Med. Century*, January, p. 31.

“At a meeting of the Medical Association of New York Dr. John Blake White read a paper on diphtheria, in which he voices strongly his own opposition to the use of antitoxin, and says that the treatment is being discredited in Paris, that the learned bodies in Moscow have denounced its fallacy, and that the weekly mortality in Paris from diphtheria shows a steady increase over previous years, notwithstanding the fact that antitoxin is there generally used. In the discussion which followed there were some enthusiastic defenders of antitoxin, but the majority were sceptical, if not positively antagonistic.”—*Amer. Homœopathist*, February 1, p. 43.

Apis.—In a discussion on this drug Dr. Dills mentioned a case of œdema of the lungs where it effected a cure. He was guided to its use by the symptom, “Feels as though every breath will be his last.” Dr. Monroe spoke of a case of ovarian tumour where apis 30 had reduced the patient’s waist measure six inches in about four months.—*Amer. Homœopathist*, December 15.

Apocynum.—Dr. Bradford verifies Dr. Freligh's statement of the value of apocynum in the urinary troubles of "old sinners," and relates experience with it in the strangury and the incontinence of urine of such subjects.—*Hom. Recorder*, December, p. 552.

Arnica.—In an experiment at the laboratory of the Hôpital St. Jacques, Dr. Jousset has ascertained for arnica, as had Dods for calendula, that its repute as a vulnerary did not arise from any antiseptic qualities possessed by it.—*L'Art Médical*, January.

Arsenic.—Dr. van Deursen relates three cases of epithelioma illustrating the value of the late Dr. J. S. Mitchell's treatment by triturations of arsenic—the 3x being taken internally and the 2x sprinkled upon the sore. The cure in all three was complete.—*Hahn. Monthly*, December.

Aspido-spermine.—This is a preparation of the alkaloids found in quebracho, a South American shrub which has gained some credit of late as relieving dyspnœa. Dr. Halbert found it of great value, in the 3x trituration, in a case of asthma which had proved rebellious to much other medication.—*The Clinique*, October.

Belladonna.—Dr. Allen contributes to the *Homœopathic Recorder*, of December, what seems to be a lecture on this drug, and states therein two unusual pieces of experience. He finds it never indicated in acute inflammation of the throat, and rarely so in convulsions, even of children.

Bellis.—Dr. Dewey has an interesting article on bellis perennis in the December number of the *Medical Century*, in which he cites the following remarks supplied to him by Dr. Burnett, to whom mainly we owe the remedy:—"Bellis acta very much like arnica, even to the production of contingent erysipelas. It causes feeling of being very tired, prover wanting to lie down. It acts on exudates, swellings, and stases, and hence in a fagged womb its action is very satisfactory; indeed, in the discomforts of pregnancy and of varicose veins, patients are commonly loud in its praise. In the giddiness of elderly people (cerebral stasis) it acts well and does permanent good; likewise, and particularly, in fag from masturbation; in old labourers, especially gardeners, it is a princely remedy. Its action in the ill-effects of taking cold drinks when one is hot is now well known. It is a grand friend

to commercial travellers, and in railway spine it has not any equal so far as my knowledge reaches. I think stasis lies at the bottom of all these ailments. It should not be given at night, for it is apt to cause the patient to wake too early in the morning—a symptom which, occurring idiopathically, it will often, in higher dilutions, cure.”

Causticum.—Dr. M. E. Douglass writes:—“Causticum is more efficient in the lying-in chamber than ergot or the forceps, when the delay is caused by inertia of the uterus. If the woman will make no effort to expel the child, a dose of causticum 30x will often cause good pains to come on.”—*Amer. Med. Monthly*, December, p. 312.

Chelidonium.—Dr. St. Clair Smith commends this drug highly in “short exhausting cough excited by a sensation of dust in the trachea, throat, and behind the sternum, which is not relieved by the cough.”—*Amer. Homœopathist*, December 15.

Chininum arsenicosum.—“With this remedy I cured a case that was in desperate straits. The patient had been exposed to malaria, and had taken enormous doses of quinine. The spleen was tender and much enlarged; prostration was extreme, as also restlessness; there was brown, offensive diarrhœa and cold sweats. Natrum mur. and arsenicum failed, but chininum arsenicosum 6x cured.”—Royal, *Hahn. Monthly*, January, p. 62.

Coffee.—Dr. Combemale relates a chronic case of coffee-poisoning. The symptoms were vertigo, emaciation, and intense headache—generally worse at night, and most marked in the temporal regions; he described it as a heavy cap pressing on his head. It prevented his sleeping more than two hours or so in a night. He dreamed considerably, and stated that he always saw grotesque animals passing before him.—*Hahn. Monthly*, December, p. 785.

Crocus.—The well-known sensation as of something alive in the abdomen, caused by this drug in its original proving, led Dr. Blackwood to its use in a case where a lady of 26 complained of a lump rolling around in her bowels. Nothing was to be felt on examination, but the feeling had troubled her for a year and a half. She presented also the hysterical variability of mood characteristic of the drug. The 12x and 30x potencies effected a speedy and lasting cure.—*The Clinique*, January, p. 53.

Duboisin.—Dr. Cartier writes that he has always found duboisin successful in non-purulent conjunctivitis, whether acute or chronic, and whether diathetic or traumatic in origin. He gives the 3rd dilution.—*Revue Hom. Française*, January, p. 8.

Gelsemium.—This medicine is highly praised, even in the 30th dilution, for “blind headaches” when not dependent on anæmia.—*Med. Century*, January, p. 13.

Dr. Allen found the same drug, in the 6th dil., curative in a more serious cerebral affection which, supervening upon sarcomata twice removed by the knife, strongly pointed to malignant disease within the cranium. The remittent fever associated with the head symptoms, and these themselves, led to the choice of the remedy; and not only did the fever subside, but the whole case cleared up, and three years later the patient was in very tolerable health.—*Hom. Recorder*, January, p. 10.

Geranium.—The Kaffirs and Zulus account geranium root, chewed, a specific in dysentery; and British army surgeons have found it very efficacious given as a decoction made with milk. In its only proving in our school, tenesmus was a marked feature.—*Amer. Homœopathist*, January 1, p. 11.

Hamamelis.—In an interesting article on the treatment of hæmorrhages in *L'Art Médical* for December, Dr. Jousset would limit the sphere of hamamelis therein to such fluxes as come from the hæmorrhoidal veins; but in these esteems it so highly that, if it fails to arrest the loss of blood, he infers that there must pretty certainly be cancer of the rectum. While admitting that the 3rd and even the 6th dilution will act, he prefers fractional doses of the tincture. However, in the January number, he relates a bad case where the latter only achieved temporary results, while on going to the 3rd permanent improvement set in.

Hedeoma pulegioides.—Of the penny-royal (which we used to call mentha pulegium) Dr. Paul Allen has made a proving on himself conducted with the mother tincture. Much burning irritation of the kidneys and urinary passages, and rheumatic pain in right thumb and left tendo Achillis, were the chief symptoms induced. It has acted well, in the 1st dil., in troubles of the former kind.—*Hom. Recorder*, February.

Jaborandi.—In an article on the uræmia of elderly men—*i.e.*, secondary to prostatic and bladder trouble—Dr. Clifford Mitchell

mentions the use of jaborandi to induce free diaphoresis. "One elderly patient," he writes, "who five years ago was sinking into coma, being already in a condition where he could speak but a few words when roused, is now alive and in good health, as a result of the prompt action of jaborandi. Given in two-drop doses of the first decimal dilution, every fifteen minutes, a welcome perspiration was obtained, following which the patient awoke from his stupor. This patient has, since recovery from the attack, kept out in the open air most of the year round . . . and has not had, in five years, any recurrence of uræmia."—*Medical Era*, January, p. 3.

Mercurius corrosivus.—A case of poisoning by corrosive sublimate is related in much detail by Dr. Hinsdale in the December number of the *Medical Century*. Its main interest lies in the picture presented of acute tubular nephritis (large white kidneys), of which—and not of the gastro-enteritis—the patient died on the fourteenth day after the ingestion of the poison.

Moschus.—Dr. Jacobi commends this as a cardiac stimulant in the prostration of influenza. "The 10 per cent. tincture should be given in doses of five to ten minims every half hour for eight or ten doses. This remedy has many times tided my cases over desperate crises."—*Charlotte Medical Journal*, January, p. 49.¹

Phosphorus.—Dr. F. F. Laird, while recognising the supreme importance of dieting in infantile scurvy, maintains that phosphorus plays an important part also as a medicament, especially when hæmorrhagic effusions occur in the pleura or elsewhere. He well demonstrates both its homœopathicity and its efficacy.—*Pacific Coast Journal of Homœopathy*, December.

"An extensive literature is quoted by E. Kossowitz to support his view that, with the introduction of phosphorus, a new era in the treatment of rachitis has begun. Most authors are of opinion that phosphorus aids the progress of ossification, and that the convulsions, laryngo-spasm, insomnia and restlessness are better benefited by this than by any other drug. He recommends it dissolved in cod-liver oil, in which form it keeps well for months."—*Amer. Homœopathist*, January 1, p. 11.

¹ Dr. Goodno, in the same circumstances, relies mainly on camphor, of which he gives one to five grains per dose, generally hypodermically.—*North Amer. Journ. of Hom.*, January, p. 16.

A case of cancer of the tongue is reported by Dr. Allen, in which, the physical and mental symptoms calling for phosphorus, it was given in the 6th dilution. Complete cure resulted.—*Hom. Recorder*, January, p. 13.

Plantago.—A patient had intense pain, hindering sleep, in the last molar and canine teeth of the lower jaw on the right side. The teeth felt long and were very tender, rendering mastication impossible. A dentist diagnosed “pyorrhœa alveolaris,” and urged extraction. Dr. Hinsdale gave a drop of plantago ϕ every hour. Within three hours after the third and last dose the pain subsided, and did not recur—the teeth soon becoming firm again.—*Med. Century*, January, p. 13.

Ratania.—A good case of fissure of the anus is translated in the *Clinique* for December from the *Homeopathische Monatsblätter*, in which complete relief and healing were obtained from the 2nd dil. of ratania internally, without any local application whatever. The pain was, as indicated by Dr. Allen, worse after than during stool.

Suprarenal extract.—Dr. Floersheim has found the extract of the suprarenal glands as valuable a heart-tonic as it is a vascular constrictor. [Dr. Floersheim has written to the Editor, asking him to call his readers' attention to his experience as stated above—it originally appeared in the *New York Medical Journal* of October 6, 1900—and to request them to communicate to him, at 218, East 46th Street, New York, any verification of it they may make, specifying the condition of heart and pulse (including rate of latter) before and after swallowing the dose—which is three grains of the powder, chewed and swallowed without water. He finds it act within ten minutes.]—*Hahn. Monthly*, December, p. 799.

Another observer calls attention to the frequent occurrence of secondary hæmorrhage when the extract is used as a styptic in operations within the nose.—*Ibid.*, p. 789.

Terebinthina.—In an exhaustive article on hæmaturia in the *Hahnemannian Monthly* of December, Dr. Knowlton writes:—“Reginald Harrison records an instance in which the whole crew of a ship carrying a cargo of turpentine suffered from hæmaturia—one sailor dying.” [If this should meet Dr. Knowlton's eye, would he give the Editor the reference?]

Thuja.—This remedy, given internally, is generally less effective against single warts than when a crop is present. Dr. Hawkes relates a case, however, where a large wart on the left cheek shrank and finally disappeared in less than three weeks under such treatment.—*Pacific Coast Journ. of Hom.*, December.

THERAPEUTICS.

Asthma.—“Dr. Lyman Watkins has a specific for the temporary relief of asthmatic breathing, whatever the cause may be. He puts from 3 to 5 grains of iodoform on the back or root of the patient's tongue, and allows it to slowly dissolve there. The relief in most cases is immediate, and will last for some hours, when the dose may be repeated. It does not always cure, but will relieve nearly every case.”—*Pacific Coast Journal of Homœopathy*, January, p. 24.

Cancer.—Dr. Gilman brings forward a body of evidence in favour of the Röntgen-ray in external carcinomata. Dr. Blackman, who watched one of the cases under the treatment, noted how, after each exposure to the rays, the odour and discharge became markedly less, while the pain so subsided that the patient would sink into refreshing sleep.—*The Clinique*, January, p. 25.

Diabetes.—Dr. Elb relates four cases to show that medicines selected upon the strength of the general symptoms may cure diabetes, though they have never produced glycosuria. Arsenicum 30 was the remedy in the first; the same medicine of the 3rd potency in the second; carbolic acid 6 and 12 in the third; iris (strength not named) in the fourth. Burning in the pancreatic region seems to have determined the choice of the last medicine.—*Med. Century*, January, p. 8.

Dysmenorrhœa.—In an able article on this trouble, Dr. Florence N. Ward maintains that it is most frequently caused by endometritis, and that this in turn is an alternative to sore throats, to which its subjects were liable in early life. In such patients, the medicine which had proved most serviceable for the sore throats will aid the dysmenorrhœa; such are belladonna, guaiacum, mercurius, and pulsatilla.—*Pacific Coast Journal of Homœopathy*, January.

Hydrophobia.—Dr. Hawkes relates a case having all the features of this fatal disease, which recovered under the alternate use of belladonna and lachesis (he does not say in what potencies).—*Pacific Coast Journ. of Hom.*, December.

Hyperchlorhydria.—Dr. Goodno finds atropine sulphate, in the 3x trit., very effective in this complaint, relieving the pain not merely as a temporary palliative, but in a permanent way. It acts rapidly as well as lastingly. Next to this drug he esteems anacardium and cuprum arsenicosum.—*Hahn. Monthly*, January, p. 10.

Panophthalmitis.—Dr. Parenteau relates three cases of acute glaucoma, in which nearly all the tissues of the eyes seemed involved, and where unhoped for success resulted from the alternation of china ϕ and lachesis 6. The reasons for the choice of these unusual remedies are not given.—*Revue hom. Française*, December.

Prolapsus recti.—In a paper on this trouble, presented to the Paris International Congress, Dr. Spalding says that when occurring in young children, and where no other cause can be found than weakness of the parts, aloes 3x has proved in his hands almost a specific.—*N. A. Journ. of Hom.*, December.

Scabies.—Some signs are shown of a return to Hahnemann's earlier manner of treating itch before the psora-theory dawned upon him. The *Medical World* says:—"Liquid sulphide of calcium is the basis of one of the most successful methods of treating itch, known under the name of Vleminck. It is suitable for patients whose skin is not irritated, but should not be used in other cases. Vleminck's formula is the following:—Sulphur. sublim., 100 parts; calcis, 200 parts; aquæ, 1,000 parts; boil together." This should be rubbed in after free ablution.

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THE MECHANO-THERAPEUTICS OF JOINT
DISEASE.

BY PERCY ROBERTS WILDE, M.D., C.M., ABERD.

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ONE of the first questions we have to answer respecting any case of joint disease is whether *rest* or *motion* is indicated.

If we prescribe *rest* we have to consider the best means of securing rest with due regard to the general health and comfort of the patient. If we consider *motion* indicated we have to decide upon the conditions under which movement shall be performed and the character and degree of movement desirable.

It is the study of such problems which constitute the mechano-therapeutic part of the treatment of joint disease. It is no part of my intention this evening to discuss fully the treatment of any particular disease, but rather to touch on as many as possible, so that we may by subsequent discussion arrive at some general principles which may be of

help to us in coming to a conclusion as to the best course to pursue in the varied conditions we meet with in everyday practice, and also in forming a judgment of some of the very conflicting views which have been advanced by various authors.

It may be convenient to first consider those disorders where motion is indicated.

I venture to think that motion is indicated in all cases of deformity of joints produced by debility. The debility of muscle and ligament being the cause of the deformity, we can hardly expect to cure it without removing that cause. If we admit this we have only one course open to us—we have to fully exercise all the functions of the debilitated muscles. We can by massage improve the nutrition of a muscle, but no amount of massage will convert a weak muscle into a strong one. We can by passive movements assist the circulation in a joint and by the process of friction assist in the removal of deposits either intra- or extra-articular, but we add no power to the muscles in so doing. We can by the faradic current cause contraction of muscles and assist in their development, but such contraction, while it is sufficient to restore function in the involuntary muscles, will not always bring back the power of motion in voluntary muscles. The reason is not difficult to find. The contraction of a voluntary muscle depends upon a stimulus to the volitional centre of the brain, the transference of this stimulus to the spinal cord and its conduction through the proper nerve to the muscle. If any part of this chain is broken or has become weakened the contraction of the muscle will not be more vigorous than that of the power of the weakest link. It is necessary therefore that we should exercise the whole of the functions concerned in a muscular contraction, and we can do this by simply asking the patient to make the required movement. If in spite of the effort he fails we may perform the movement for him, but we must *insist* upon the effort; if he tries but partially succeeds, we complete the movement. If he can accomplish the movement we offer more or less resistance, by which we increase the power of the contraction by stimulat-

ing the higher nerve centres to increased effort. I should apologise for stating facts so apparently elementary, but I see a great many cases of loss of power in limbs, in which long courses of massage and electricity have been carried out under the direction of physicians of the highest eminence; they have done good up to a certain point, but they have failed in the essential result—the patient has not recovered the power of walking.

To increase muscular power we must exercise *all* the functions concerned in muscular contraction and the secret of this is to stimulate and direct the patient's efforts. Are such exercises alone sufficient to cure joint deformity?

I think we should hesitate before assenting to this proposition.

We have brought a normal physiological law to bear upon an abnormal condition; the result is not of necessity conclusive.

There is a mechanical factor involved. Under normal conditions the axis of pressure passes through the centre of the joint, and the anatomical position of the muscles is such that by their contraction they preserve the normal equilibrium.

When deformity exists the axis of pressure is deflected, the muscles act at a disadvantage, their normal contraction does not preserve the equilibrium, and in failing to do so they excite other muscles to contract, so as either to form a compensatory curve, or to so alter the nature of the movement itself, that the pressure on the joint is relieved as far as possible.

As a result in most cases of prolonged joint trouble we have not only to treat the deformity itself, but also the abnormalities in muscular action which it has produced.

These considerations have led me to lay down a rule for my own guidance.

“In all cases of deformity of a joint produced by debility, relieve pressure, and freely exercise the muscles of the joint.”

If we take as an example a simple case of flat-foot, the result of debility, we can relieve pressure by directing

the patient not to put the foot to the ground for three weeks. With the patient in the recumbent position we can give flexion and extension movements to the ankle-joint. We direct these movements to be repeated twice or three times a day.

We can utilise these exercises for directly restoring the arch of the foot; thus, when the foot is fully extended on the leg it is grasped firmly by the operator at its extremity, and strong resistance is offered to the act of flexion.

This causes the so-called extensor muscles of the leg to contract vigorously, and pull upon the sheathes and fascia which bind their tendons to the dorsum of the foot, and in so doing they tend to lift up the arch of the foot and restore it to its normal position. It is quite easy to make a permanent cure of any ordinary case of flat-foot in three weeks by this method.

It may be necessary sometimes to use some support for relieving the weight on the arch of the foot instead of ordering complete rest. In such a case the support should be taken from above the ankle-joint and the weight transferred to the heel of the boot, but usually in these cases the enforced rest for three weeks is indicated by the patient's general condition.

The only exercise which I have seen recommended in the text books for flat-foot is to direct the patient to raise the heels from the ground and to stand on the toes and to repeat this movement several times. The result is that the arch of the foot which cannot bear the *normal* pressure is submitted to *abnormal* pressure. I take this as an illustration of movements wrongly directed.

The converse of the method we adopt is to direct the patient to wear a convex pad in the boot with the view of supporting the arch of the foot.

This is one of those palliative measures which give no additional strength to the debilitated muscles, and has been tried without success in many of the cases that have come under my notice.

If we apply our principle to cases of *lateral curvature* of the spine we shall exercise the muscles while the patient is

in the recumbent position, or do so while seated, when the hands of the operator give the necessary support.

I may say of the actual exercises employed I have learned to attach most importance to those which are directed to increase the expansion of the chest walls.

If we can make a patient with lateral curvature breathe freely and deeply we have set to work a force which, during the whole twenty-four hours, is tending to restore the spine to its normal position.

I now obtain results in half the time it occupied when the muscles alone were made the object of consideration.

It happens that a large proportion of the girls who are brought to us with lateral curvature have had a course of calisthenics, or Swedish exercises. It may be after such a course that the curvature is first noticed.

I think the reason for this will be found in the fact that the patient has had to stand during the exercises—that the normal axis of pressure not being preserved the muscles act at a disadvantage and tend to increase any deviation which already exists.

I think for this reason that a course of calisthenics, which do nothing but good when the muscles are in a normal state of equilibrium and the patient is not debilitated, are harmful when the patient finds it fatiguing to preserve the normal axis of pressure. The converse of our method is to endeavour to remove the deformity by the continuous pressure of splints. Such treatment does nothing to restore the debilitated muscles, while the pressure exercised upon the thorax is most prejudicial, preventing as it does that free expansion of the chest which is the thing most to be desired in cases of scoliosis.

Our late colleague, Dr. Roth, waged successful war against such appliances, and proved incontestably the value of physical exercises, but the principle we have adopted does not render it necessary that we should condemn every sort and kind of appliance in lateral curvature. We have to relieve pressure between the exercises. We may do this by telling the patient to lie upon a reclining board—in such cases the reclining board is practically a splint. Personally

I should prefer to adopt measures for relieving weight, which do not prevent the patient from walking in the open air or playing games with other children.

It is quite easy to cure incipient cases with nothing *but* exercises, there are more advanced cases where we *must* do something to preserve the axis of pressure between the exercises, and in such cases I think a light support, which checks the tendency of the patient to "loll" about in false positions but which does not interfere with the action of the muscles and which allows free exercise in the open air, is better than reclining for so many hours a day on a special couch.

I will refer to *the kind of appliance* I mean later on. Exercises must always play an important part in the treatment of rheumatism and gout.

After an attack of acute rheumatism, every joint should be put through its full movements at the *earliest* possible moment.

There is a tendency for small adhesions to form external to the joint. Immediately after acute inflammation has subsided, these are so plastic that they can be broken with practically no pain, but if left undisturbed they become organised, and although they may not cause a stiff joint, they may almost insensibly limit its movements. In this way a portion of the articulation becomes disused, its vitality is lowered, and it may become the site of chronic rheumatic disorder.

In *acute gout* I always commence movement *before* the inflammatory symptoms have quite ceased. I hold the view that the deposit of urate of soda has existed in the joint for months or years prior to the attack, that during the acute attack a large proportion is absorbed, but rarely, if ever, completely. By exercising the joint while effusion still exists we have the opportunity of obtaining more absorption than would otherwise be possible. I do not think that this treatment prolongs the attack, nor do I think it would matter very much if it did, as the whole process of the acute attack is an effort at elimination which I think we should assist rather than suppress.

In cases of *rheumatoid arthritis*, systematic movements of the joints afford us the only method of preventing ankylosis. Without entering into any discussion as to its pathology, I think there is evidence that the degenerative changes in the joints correspond to a debility of the higher nerve centres, and that we can stimulate these centres by encouraging efforts on the part of the patient to effect movement and assisting these efforts.

Pain is not a contra-indication to movement in rheumatoid arthritis, and it is very certain that those patients who will submit to a certain amount of pain, and move their joints in spite of it, are able to convert an apparently hopeless joint into one which will eventually do good service.

We find that it is the wrist joint which is usually the first to become ankylosed, and this because it is possible to perform almost any ordinary movement of the hand without moving the wrist joint.

On the other hand, it is the right elbow joint which retains a certain degree of movement when every other joint is ankylosed, because the patient *must* use this joint to convey food to the mouth.

It is usual to regard rheumatoid arthritis as a disease which must go on to ankylosis. I am personally of opinion that if the functional activity of the joint can be maintained over a certain period of time, it may be months or years, that the tendency to degenerative changes in the joints ceases.

There are of course cases where the joint symptoms are only a part of a general degeneration where it is not possible to obtain any reactive power, but such cases constitute a very small percentage of the number of those which are given a hopeless prognosis because we classify all under one name.

Both in the treatment of rheumatoid arthritis and in stiff joints where exercises are employed to extend the area of motion, which implies a certain amount of stretching and breaking down of adhesions, the use of heat prior to and during the movement not only facilitates the work but also greatly relieves pain. Of all the methods I have used for this purpose I have found nothing so convenient as a stream

of hot air directed on the joint, and absolutely limited to the joint under treatment—when using high temperature for anæsthetic purposes it is always desirable to limit the surface acted upon as much as possible.

There is another condition in which I have used exercise with great success, and that is in the treatment of *sprained joints*.

The method I adopt is as follows : Moist heat is applied for two or three hours after the injury. Then the swelling is gently manipulated until the greater part of the effusion is removed. Next the joint is covered with a layer of cotton wool and firmly bandaged. Then flexion and extension movements with resistance are given, and it often happens that a patient with a badly sprained ankle will be able to walk round the room at the finish. The *rationale* of the treatment is as follows : The effusion produced by a sprain causes pressure and limits the circulation in the joint, and the treatment by rest and splints rather encourages this condition. By removing the effusion and promoting a healthy circulation in the joint, repair is promoted and pain is relieved. The rapid results obtained by this treatment are remarkable.

The conditions under which *rest* is indicated in the treatment of joint disease may be summed up in a few words.

Rest is of course necessary in all inflammatory affections of joints. We may take it as a general rule that where the surface of the skin over a joint shows greater warmth than the surrounding tissues, it is advisable to rest the joint until that symptom has disappeared.

In *tubercular* diseases of the joints, the absence of heat is not an indication for motion. It is generally agreed that we should rest the joint for some time after all symptoms have disappeared.

Another condition in which absolute rest of a joint is indicated is in those cases where deformity of a joint is due to spasm of muscle. Here we put the limb in the most favourable position, and in doing so oppose resistance to the spasm, so that the treatment is really one of active counter-traction, although in appearance it is quite passive.

All the mechanical problems concerned in the application of rest are represented in the treatment of hip disease, and it may be convenient to consider them in this connection; but it may be as well to arm ourselves with a few fixed principles before we embark upon a subject which has given room for very wide divergence of opinion. We are prepared to admit that prolonged rest of a joint is anti-physiological; it lowers the nutrition of the joint; it causes wasting of its muscles and of the whole mechanism concerned in its functions.

We admit all this, but *yet* we say that it is better that all this should happen than that the joint should be exposed to the more serious danger which would follow from friction of its inflamed surfaces.

But suppose we put up a joint into splints, in such a way that its functions can be no longer exercised, and we produce all the asthenic conditions from such loss of function, and at the same time we allow such a degree of movement as will permit of friction between the inflamed surfaces. Shall we not be placing it under the condition *least* favourable to resist the disease, and under the condition *most* favourable to ankylosis?

The fear of producing ankylosis is in the mind of every practitioner when he orders rest of a joint for a prolonged period, and clinical experience shows that such a result is not uncommon.

But if we examine the methods commonly used for securing rest to a joint in such cases, it very often happens that we find that *absolute* rest to the joint has never been given. It is to Hugh Owen Thomas that we owe the teaching and the demonstration of the fact that absolute immobilisation of a tubercular joint is the best way to avoid ankylosis.

In considering the mechanical problems involved in the immobilisation of joints, there are one or two simple factors we may keep in mind.

A joint should occupy the centre of the splint which retains it. It will be readily understood that if the joint is considered as the fulcrum, levers of equal length will give the *least* tendency to movement. We may also take it as a

principle that the splint must derive its support from two fixed points of the skeleton. The rigidity of a splint can never be greater than the parts to which it is attached.

As our splints are intended to avoid irritation within the joint, which often causes reflex spasm in the muscles outside it, we must be careful in fixing our splint to avoid causing irritation *outside* the joint, which may reflexly cause irritation within it.

Now there is a simple mechanical principle which helps in this connection. The intensity of any given pressure diminishes with its area. Thus a piece of board may form a fairly comfortable seat, but if we sit on the edge of that piece of board it forms a very undesirable location. We may pad the edge of the piece of board as softly as we can, but we shall be glad to abandon the padded edge for the broader surface of the flat board itself, because it increases the area of pressure. The bands which we use to retain a splint in position, or the parts of the splint which have to directly support the weight of the body, depend for their comfort more upon their breadth than their padding.

On referring to the "International Text-Book on Surgery," one of our latest text-books on the subject, I find that the practitioner is advised to use Taylor's splint for the treatment of hip disease. I have copied the drawing of this splint (fig. 1). You will observe that it is a side splint with a band round the waist. If we apply our general principles to this splint we shall first observe that the joint, instead of being in the middle of the splint, is at one end of it; that the shorter arm of the splint, that between the hip joint and the crest of the ilium, is supported by a narrow band round the waist. The waist, while it bears pressure *well*, offers no fixed point of the skeleton for an attachment except at the back, the abdominal walls being mobile. The waist band finds support in one direction from the perineal bands, but this would not offer any resistance to the movement of the limb either anteriorly or posteriorly, which are its natural movements. This splint does not comply with the elementary mechanical principles which we have laid down for our guidance, and we can say at once that such a splint will not

immobilise the joint. On turning to the text we find that the author admits this, but he tells that while it fixes the hip less well than Thomas' splint it enables us to exercise traction on the limb. I think that before we commence to treat a case of hip-joint disease we ought to make up our minds whether immobilisation is necessary or not. If we decide on immobilisation, a splint which will not immobilise is of little use to us.



FIG. 1.

I am ready to admit that traction is a valuable method of treatment in a disease attended by spasmodic contraction of muscle. It acts as a sedative to the spasm. It was formerly supposed to draw the inflamed surfaces apart and so preserve them from friction. We recognise now that this does not happen. No chain is stronger than its weakest link. If we employ traction below the knee, and we put on

such a degree of weight that it produces true lengthening of the limb, the ligaments of the knee joint would stretch long before the powerful muscles of the hip were overcome. Or to look at this controversy from clinical grounds. At the time when traction by weight and pulley was the recognised treatment in all hospitals, Hugh Owen Thomas, having no hospital appointment and working among the poorest classes of Liverpool, under the most unfavourable conditions, made a world-wide reputation by treating hip disease without traction—perhaps I should say without downward traction—but by *immobilising* the joint, which it is impossible to do when traction is employed. Perhaps I am wrong to use the word “impossible,” but the desire for traction combined with immobilisation has existed for many years, and Taylor’s splint shows how little progress has been made in attaining it.

It is very natural in a disease attended by shortening of the affected limb that there should be a desire for downward traction. But as the spasm of muscle is a direct result of irritation within the joint, it appears more rational to try and remove the cause than to concern ourselves only with the effect.

If when we have subdued all the irritation we find that the limb is still shortened, traction may then be used with advantage. If we wished to design a method by which traction could be carried out while the patient is walking about on crutches, I do not think we could find anything much more effectual than Thomas’ splint.

If you look at this drawing of a patient wearing a Thomas’ splint (fig. 2), and you remember the great weight of this splint, it is only necessary to do away with the straps which support the splint over the shoulders, and to allow the thoracic band to be about as loose as it is generally worn by patients, and you have the whole weight of the splint borne by the thigh, while the leg is suspended in the air. This is a very decided method of causing downward traction, and perhaps this partly accounts for Thomas’ success. At least it might be consoling to the advocates of downward traction to think so.

It is a curious fact that while Thomas' splint was long opposed because it did not do something it was never intended to do, although I think it does do it to some considerable extent, the real mechanical defects of his splint have never been pointed out. You will observe that this splint complies with the elementary mechanical conditions. The joint is in the centre of the splint, and it derives its



FIG. 2.

support from two fixed points of the skeleton, the thorax and the femur. Therefore when properly applied it is capable of immobilising the joint. The practical difficulty is to *keep* the splint properly applied.

The pressure of an iron band round the chest is not agreeable to the patient. He seeks relief by loosening this

band. The vertical band of iron passing from the hip to the thoracic band is resting against the convex surface of the chest ; it is like a plank on the side of a hill, it must be fixed or it will slip.

The thoracic band represents two levers of unequal length, the shorter on the diseased side and the longer on the sound side. Now when the thoracic band is loosened and the body is slightly rotated, the mechanical conditions are such that the vertical support will tend to slip round to the diseased side, and as Thomas remarks himself, "tend to become a side splint."

We may observe also that this vertical support comes right across the convexity of the buttock, which is not only the most favourable position for displacement, but one which can hardly fail to produce undue pressure upon the skin, a fact which Thomas himself recognised, and published a plate showing how the skin of the buttock under the splint could be changed so as to prevent a sore being formed.

The mechanical defect of Thomas' splint is not its incapacity to immobilise the hip-joint, but that it is a splint that takes no account of the anatomical construction of the body. Like a Russian railroad, it makes a bee-line from point to point, and owes the maintenance of its position entirely to pressure.

In attempting to improve upon these mechanical defects it will be understood that I have done so not as an opponent, but as a disciple of Thomas. In respect to the treatment of tubercular disease I believe his teaching is sound and will endure. He was not simply the inventor of a splint, but the teacher of a principle which even now is not as fully recognised as it deserves to be.

The mechanical problems involved do not belong only to the treatment of hip-joint disease, but to the general principles of mechano-therapeutics.

If it is necessary to carry a vertical support above the hips, where is the best position to place it?

The contour of the thorax is convex except at one point, and that is immediately over the vertebral column, where

there is a concavity. This is also the point of the least movement in all rotatory movements of the trunk. It also corresponds to the place where nature places its support for the upper portion of the body.

Theoretically we are justified in placing a spinal support immediately over the vertebral column (figs. 3 and 4).



FIG. 3.



FIG. 4.

In practice I have found that when it is necessary to put a crutch support from the axilla to the hip that it is more comfortable to the patient to place this support down the centre of the back than in a direct line between the two points.

To follow out the anatomical arrangement, we find that the vertebral column is fixed on a broad base furnished by the pelvis, and therefore I suggest that we should affix our central vertical support to a transverse one which crosses

from one hip to the other at a level with the last lumbar vertebra.

We have now two iron bands in the form of an inverted T. We may say that these are one-eighth inch thick by one inch.

The next question is, How are we going to attach these to the trunk?

A band round the thorax is effective but uncomfortable, and any constriction of the chest is very undesirable in a case of tubercular disease.

A band round the waist is well borne, but mechanically ineffective. Again we can fall back on the anatomical arrangement. The pelvis is the natural basis of spinal support.

To construct an artificial pelvis for our support it is necessary that it should be rigid, because while we have the spinal column behind and the wings of the pelvis on either side as fixed points, we have the mobile abdominal wall in front, which we must bridge to secure immobility.

I think the best material for this support is leather—the thick “butt” leather out of which the soles of boots are made. I like this better than poroplastic felt.

This must be so accurately moulded as to form a perfect cast of the part.

This is very simple. We take a paper pattern, wide enough to extend from one or two inches above the crests of the ilia to the level of the inferior spine and long enough to meet in the centre of the abdomen.

From this the leather is cut. It is rolled up and stood on end in a bucket of water for three to four hours. It is now sufficiently pliable to be wrapped round the part and firmly bandaged in position.¹ The under garments which will be worn beneath the splint, and a piece of jaconet sheeting, are interposed between the leather and the skin to prevent the moisture of the leather being felt.

¹ I have lately used the thinner butt leather, which is more easily moulded over the hips. I then line it with the basil leather, and the paste used in fixing the lining gives the whole a greater rigidity than the thick leather, while it is lighter in weight.

In twenty-four hours this may be slipped off without bending it and it can be left to dry for another twelve hours. It then only wants trimming, holes made for laces, or straps fixed on with bifurcated rivets.¹

Any practitioner can make this for himself. If it is desired to line it with basil leather this can be affixed with a paste made of rye flour, a very weak solution of glue being used instead of water.

It will be found that this leather model of the pelvic contour does not depend for retaining its position upon the tightness with which it is laced, but upon its shape. It forms an oval broader below than above and it cannot change its position because the body will not accommodate it in any position but its own.

We can now rivet out inverted T-shaped piece of iron to the leather and we shall then find that the vertical support is quite rigid. The body can only escape from it when it is flexed forwards, and we can prevent movement by the application of shoulder straps as shown. These are, of course, padded.

These shoulder straps are not only well borne, but they also give a great deal of support to the upper part of the body.

It will be seen also that the weight of the appliance is equally divided between the two shoulders and the two hips and that all the parts acting upon the vertical support are levers of equal length.

This part of the splint is equally adapted for providing a support in cases of spinal disease, or for the treatment of hip disease on either side or on both sides. I use it also for making a side walking splint for certain cases of hip disease. For lateral curvature the mechanism is the same, but a much lighter splint answers every purpose.

The splint for the lower extremity occupies the back of the leg and thigh from two inches below the buttock to the lower third of the leg. I have used wood (ash) two inches broad by half-inch, because it is light and rigid, but a strip

¹ Except in the case of very young children straps are always employed, although laces are shown in the drawing.

of iron one-eighth to three-sixteenths of an inch by one inch makes a neater appliance.

This is fixed by two bands of leather which are modelled to the leg whilst wet in the same manner as the pelvic band. The upper is four inches in breadth, the lower three inches. These are much more comfortable than the narrow iron bands used in Thomas' splint.

It is advisable to make and fit the spinal and limb supports before joining them by the gluteal bands.

The position in which these bands are placed will best be described by referring to the diagram. They are made of iron half-inch thick for infants and three-quarters inch thick for adults, and half-inch in breadth. They are bent to follow the exact contour of the parts over which they are applied, and so arranged that they are half-inch from the buttock throughout their length. They have to be padded, and when this is done they just touch the skin but exercise no undue pressure upon it.

It will be observed that by having two strips passing on either side of the buttock, instead of one passing across its convexity, there is an immense mechanical gain. The convexity of the buttock instead of being a source of weakness becomes utilised to assist in retaining the splint. It will also be observed that the triangle formed between these gluteal bands and the transverse pelvic band offers resistance to any abduction or adduction of the limb in a manner which is impossible to attain where a single straight band is employed. As every part of this splint is modelled to the part where it is placed there is no tendency to displacement, no increased comfort to be obtained by loosening the bands at any point. Without undue pressure upon any part it affords perfect immobilisation of the hip-joint.

It may be said of this splint, as of Thomas', it does not produce downward traction. Now the object of downward traction is to avoid shortening, and what we call shortening is really an elevation of the hip. Now this splint does what, as far as I know, has never been attempted in any other hip splint, it offers resistance to the elevation of the hip, its whole tendency is to press the crest of the ilium downwards.

It might be argued that if we put pressure upon the ilium we shall cause the acetabulum to be pressed against the head of the femur, and theoretically this should result in an increase of pain. But in practice there is a marked relief from pain the moment the splint is applied. It is not easy to prove the point, but I personally believe that in hip-joint disease the head of the femur is always drawn up into close contact with the acetabulum, as an involuntary effort to relieve pain. If traction upon the limb really prevented this condition there would be an increase, rather than a diminution of pain.

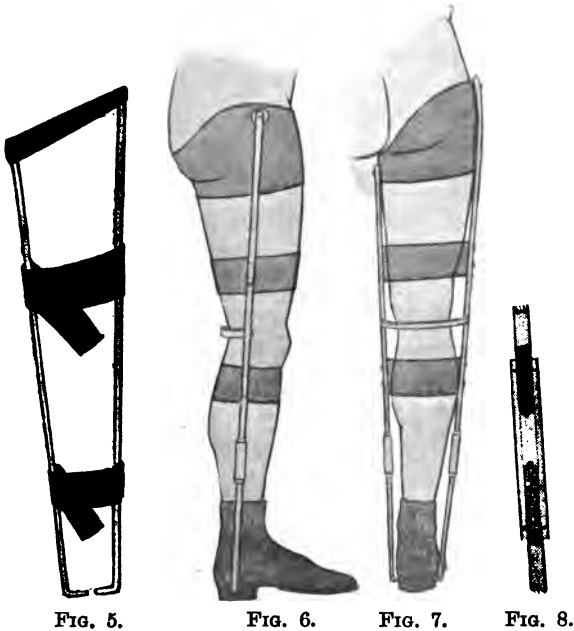


FIG. 5.

FIG. 6.

FIG. 7.

FIG. 8.

I propose to speak very briefly on the subject of fixation of the *knee*-joint. When the patient is confined to bed it presents no difficulties. When long-continued rest of the knee-joint is indicated it is important that the patient should become ambulatory as soon as possible. For this purpose we have no better splint than Thomas' caliper, of which I have a drawing here (fig. 5). It consists of an oval metal

ring well padded, supported by two parallel bars which are fixed to it on either side at one extremity, and to the heels of the boot at the other.

The weight of the body rests upon the padded ring, and is conveyed to the heel of the boot. The knee-joint is thus relieved from pressure, its movements are prevented, but yet it is left open for any inspection or local treatment which may be required. I have used this splint for children with very satisfactory results, but with adults I have received many complaints as to its discomfort, and many in consequence would refuse to wear it. One has no very satisfactory answer to such complaints, because if we let the weight of the body fall upon a rigid iron bar, no matter how well we may pad it, the intensity of pressure must be great because it is not distributed.

To overcome this difficulty I have abandoned the padded ring, and use instead a leather socket, as is shown in this diagram (figs. 6 and 7). It comes within half-inch of the perineum on the inner side of the thigh, crosses the buttock so that it is just above the convexity, and rises on the outer side to within two inches of the crest of the ilium.

This socket is modelled to the part in the same manner as the other leather bands, and differs only in the fact that its two extremities are riveted together. For the lateral supports I use thick steel wire. This is made into loops at the upper extremity, and bolted to the leather in such a way as to allow the socket to swing cradle fashion between the two supports.

This capacity of the socket to share in the motion of the leg greatly increases the comfort, and is found especially valuable when the patient sits down. This movement of the socket in no way alters the position of the lateral supports, in fact they retain their position more accurately than when rigidly fixed to the padded ring used by Thomas, because it would not be bearable if the padded ring was fitted as closely as we can the socket.

It will be observed that the two bolts upon which the socket swings are not on the same level. The outer is much higher than that on the inner side of the leg. This is a

mechanical necessity, as otherwise the pressure on the back of the socket, when the patient is standing, would cause its lower edge to press against the back of the thigh.

It most frequently happens in knee-joint disease, that we have a certain amount of contraction of the leg to deal with, and the splint I have illustrated is provided with an arrangement for making traction on the knee.

The divided ends of the steel rods are tapped to form screws and are inserted into a piece of brass tubing three inches long. They are then secured by a couple of nuts (fig. 8).

It is only necessary to loosen the lower nut and turn the lower wire once round to lengthen the splint by about the one-thirty-second of an inch. If this is done every day the traction of the knee-joint is so gradual that it is hardly perceptible to the patient.

I believe that this appliance as shown, and which I call a cradle traction caliper, forms the best method we have at present for treating cases of contracted knee-joint. By means of the hot-air douche we can apply heat for local treatment without removing the splint and increase our traction whilst the patient's ligaments are relaxed as a result of the heat employed. When this splint is employed merely to retain the knee-joint at rest the traction part of it is not necessary. As we shall probably want the patient to become ambulatory, an important question arises as regards weight. The splint must be rigid, and in order to obtain that rigidity the only method employed at present is to increase the thickness of the iron supports.

I have here a strip of iron one-eighth inch thick by half-inch in breadth. You will see that this is so flexible that it would be absurd to use it for the side supports. I have here also a strip of wood (ash) half-inch by one inch and rounded on one side. It is quite thick enough to be neat, but you will observe that it has a degree of flexibility too great for a lateral support. We can only make this rigid by increasing its bulk just as we can only make the iron more rigid by increasing its weight. But here I have a similar piece of wood, one edge of which has been planed down, and

a piece of iron identical with the first I showed you is screwed along this edge. We have now an absolutely rigid bar, much lighter than anything that has been previously used for this purpose and not too bulky to be practical. It depends on the mechanical principle that a strip of iron or wood only tends to bend in the direction of its flat surfaces and not in the direction of its edges. Here we oppose the flat surface of the iron to the edge of the wood, with the result that we obtain a rigidity that neither possesses alone. I think this principle might be used under many conditions where *lightness* is a very essential factor.

There are many cases of chronic arthritic disease where the patient would be all the better for walking if some of the weight could be taken off the knee-joint. It is not difficult to devise a splint for this purpose, but there is one objection to all these splints where rigid bars are used to support the joint while a hinge is used to permit movement. These rigid bars represent the muscles, but while muscles become rigid and relaxed according to the requirements of walking, the side splints are always rigid and convey the feeling to the patient of being in irons.

I have designed a splint for such cases in which I have tried to imitate the action of the gastrocnemius muscle. When the patient is standing or commencing to walk it forms a rigid support, but immediately the knee is flexed in the act of walking or when the patient sits down the support relaxes just as the muscle would do under similar circumstances.

This is obtained in a very simple manner. There is in addition to the hinge behind the knee-joint another one concealed in the lower part of the splint. When there is pressure on the splint from above it is rigid, but when the leg is flexed there is always traction from below, and this releases the hinge and causes the splint to relax and adapt its position to the act of flexion. This represents an entirely new principle in the construction of splints and it has proved of very great advantage to me in the treatment of some very chronic cases of knee-joint disease, because the muscles of the whole limb are exercised by walking where otherwise the patient would sit the whole day.

I have already detained you so long that I will only ask your attention for a few minutes to the general question of fixing the joints of the upper extremity and of the knee and ankle-joint when the patient is in bed.

It is very easy to accomplish this effectually with a plaster of Paris bandage. Personally I have no great liking for this form of splint. It hides the joint from view, renders any examination of its condition impossible, it also must cause an unhealthy environment to the joint, which cannot be very satisfactory when we remember how quickly the synovial membranes of joints are affected by the conditions set up in the skin which covers them. But it is hardly likely that the practitioner will give up the use of an appliance at once cheap and effective unless we can supply him with something as well adapted for the conditions of out-patient and dispensary practice.

I have here some strips of iron, nine, eleven and thirteen inches in length. They are padded except for three inches from each extremity. The padding consists of a strip of felt, with domette flannel on the inner side and American cloth on the outside.

These strips can be easily bent to any angle or shape required.

I have here also some strips of tin three inches wide and eight, ten and twelve inches in length. There is a slot passing up the back of each large enough to admit the ends of the piece of iron.

These are padded in just the same way as the straight piece.

To secure any joint it is only necessary to select the padded iron of convenient length and the padded tin pieces best adapted to the case, fit them together and mould them to the part with the fingers. They are then attached by the broad pieces of black tape attached to the pads.

It is thus possible to immobilise a joint within five minutes. The materials for the whole set of such splints will cost only two or three shillings and the metal parts can be used over and over again.

I am afraid that I have wearied you with the description

of so much mechanical detail. I have tried to put before you some of the principles upon which I base the methods I employ in everyday practice. They are the best at which I have arrived at the present moment, but I should be sorry to think that they could not be improved upon. I shall try to do so myself and I shall accept with gratitude any suggestion which will enable me to render the lot of the cripple less arduous than it is.

Dr. JAGIELSKI said that he agreed in the main with Dr. Wilde. They learnt every day more and more how joint affections which formerly were put either in plaster of Paris bandages or some other immovable apparatus were now entirely liberated, quite a different view being taken from that which once prevailed. It was of the greatest importance that a joint or a fracture or a contusion should be capable of being exposed so that it might be seen or manipulated. Manipulation at as early a stage as possible was of the greatest importance, not only from the point of view of pain, but also on account of the proper healing of the part. Heat could be also applied, with or without massage. Massage, as Dr. Wilde had remarked, did not give strength, but merely soothed pain. It had, however, an effect upon the circulation and upon the nerves. They had begun to respect the nervous system. The treatment of the nerves had a very great effect upon the disposition of the patient. No doubt an adaptation of different kinds of local appliances which Dr. Wilde had described had a great deal to do with his success. It was a very great inconvenience to the patient not to be able to move, and without movement there could not be proper exercise. Exercise must be insisted upon, for they all knew the benefit of air and sunshine and movement.

Mr. KNOX SHAW said that he concurred in the advisability of rest at the commencement of the treatment of extreme flat foot. In aggravated cases of flat foot the sufferings of the patient were really most distressing. Even a week's rest was better than nothing. It gave enormous relief and helped towards the natural reformation of the arch of the foot. Then there was another point. Brought up as it were under the influence of Mathias Roth, they were inclined to consider that all cases of lateral curvature should be treated entirely by means of exercises and properly applied movements. There

was a class of lateral curvature which they saw now and then, and which could not be cured or relieved entirely by manipulations, but which needed some mechanical support. A well-directed mechanical support combined with properly constituted exercises would do much in such cases. His (Mr. Knox Shaw's) experience, especially that gained within the walls of the London Homœopathic Hospital, was that some form of traction was absolutely essential in commencing the treatment of a good many joint diseases. He had never looked upon traction as treatment for lengthening the limb, but for overcoming muscular spasm before the limb could be placed in anything like a normal position. He still held what perhaps Dr. Wilde would regard as the unorthodox and old-fashioned view that pain was relieved in these cases by relaxing the muscular spasm and so keeping the two inflamed surfaces of the joint from being approximated. That certainly seemed to be so in cases of hip-joint disease in children, and that was why in the hospital they generally began with extensions by weight. As soon as the lordosis was recovered from and the leg and back were fairly straight, they placed the patient for a short time in a Bryant's splint and then put him in a Thomas' splint. He would never advise a Thomas' knee splint. It appeared to him that the device of Dr. Wilde was a very ingenious one. He (Mr. Knox Shaw) had got over his difficulties by having a very long knee splint. He never could get mechanics or even house-surgeons to realise the enormous power of flexion there was in the knee-joint. The splints used were almost invariably too short, and in a very little time there would be flexion of the joint. He had generally immobilised knees by making a very carefully moulded leather splint, buttressed probably with some metal support reaching from as high on the upper part of the thigh as it could possibly go, and as far down to the ankle as could very well be reached. That was the only way of getting a satisfactory splint for the knee.

Dr. DYCE BROWN thanked Dr. Wilde for his interesting paper.

Dr. MACNISH joined in the expression of thanks to Dr. Wilde for his most interesting paper. The apparatus he had devised was most ingenious.

Dr. GOLDSBROUGH also added his measure of gratitude to Dr. Wilde for his valuable production. He wished to ask him a question with regard to his modification of Adams' splint.

It seemed to him (Dr. Goldsbrough) Dr. Wilde's apparatus would add very much to the weight which the patient had to carry, and he would like to ask Dr. Wilde if that in itself could be any objection to it. There was one other point. Dr. Wilde, in his reference to the principle of exercising all the nerve centres in the movements of the joints, referred to stimulating the cortical motor centre, and remarked that the strength of a chain was in its weakest link. He thought that that was a little misleading, because really the cortical centres and the spinal centres, compared with one another, could never be equal in any sense. The higher centres in voluntary movements controlled the lower. If the control of the mind was taken off by weakness of will or want of mental co-ordination, that would add to the strength of the mischief that must be set up in the joint. That in itself was a point which had to be considered rather more in detail than it had been in the paper. If the cerebral control was taken off they would get not less energy but an excess of irregularity of movement. Keeping up the balance was of course a very important point and one which would exercise the ingenuity of the surgeon to a much greater degree than usual when the cortical centres were inefficient.

Dr. ROBERSON DAY said that the paper was a most excellent and suggestive one. Cases of joint trouble and flat foot were often met amongst hospital and private patients. He especially admired the inexpensive apparatus which Dr. Wilde had shown, and suggested that they should be used for dispensary and out-patient work. They appeared to present many uses for the treatment of tubercular joints, especially tubercular knees where there was a tendency to displacement. He agreed with the desirability for rest in cases of flat foot; but some cases could be successfully treated by forbidding standing and permitting walking only. He had under treatment a school-girl where this partial resting was proving very satisfactory. An artificial instep was used to support the arch of the feet while the child was walking to school, and each day massage and special exercises were given by a skilled masseuse. The tiptoe exercises had been spoken of somewhat disparagingly. There were different ways of giving those exercises, but if they were given with the toes pointing inwards, the effort of rising on the toes tended to draw the inner border of the foot up and arch it, and such a movement tends to restore the broken-down arch. He had found such exercises most successful in flat foot.

Dr. ROCHE (London) said that it had been a peculiar pleasure to him to listen to the paper. It was full of the most ingenious suggestions. The first essential necessity in treatment was to promote the comfort of the patient, and many suggestions bearing upon that point had been made. Some of the appliances which were made use of were always a terrible bone of contention between the surgeon and the patient. He agreed with the necessity of rest for flat foot, but the cases in which rest became an extreme necessity were not those of young children, but in older people rest was very important indeed, and he had seen cases in which wonderful improvement had been brought about by it. The simple and inexpensive character of the appliances which had been exhibited was a valuable feature both in hospital and in general practice.

Dr. BODMAN, who joined in the general expressions of appreciation of the ability of the paper, asked for a little further information with regard to certain cases of scoliosis which were not entirely satisfactorily treated by means of exercises.

Dr. SEARSON asked whether the simple splints which had been shown were to be bought, and if so where.

Dr. WILDE: We make them ourselves. You can get these strips of iron cut out at any ironmongers.

Mr. DUDLEY WRIGHT (in the Chair) said that he entirely agreed with what Dr. Day said with regard to flat foot, but it was utterly impossible in many cases for the patient to rest, and it was of no use to prescribe rest for them. In such cases a good deal could be done by means of external support. The majority of the people who suffered from flat foot complained of the pain which ran along between the heads of the metatarsal bones. This pain was due to the fact that the metatarsals pressed upon the digital nerves, and by means of mechanical supports a great deal of the pressure was relieved. With regard to the exercises of raising the body on the toes, he thought that if the mechanics of the movement were looked into it would be found that when the movement took place the arch of the foot was not pressed upon at all, and the whole weight of the body was transmitted, not through the keystone of the arch which was made use of in the ordinary standing position, but straight through the tarsal and metatarsal bones to the head of the first and second metatarsals, and thus to the toes. In that way the arch of the foot was to a certain extent relieved of the pressure of the body. In addition to that

the movement undoubtedly exercised the tibialis posticus muscle. Dr. Wilde had remarked that the fear of ankylosis was in the mind of every practitioner in putting a joint to rest for a prolonged period. All he (Mr. Wright) could say was that it would be a good thing if the fear of ankylosis was stamped a little more deeply on the mind of everybody, for there was no doubt that many of the joints were immobilised for a long time when they did not need to be, with the result of permanent ankylosis. There was a craze for immobilising, and it led to a great amount of trouble. He agreed with what had been said by Mr. Shaw with regard to the extension of joints in children in the early part of the treatment for hip-joint disease. He had sometimes been prevented from putting on an Adams' splint on account of the contraction which had taken place, and extension with a few pounds, beginning with three or four and increasing to five or six, hastened the matter and made it possible for a splint to be applied. With regard to tubercular joint,—among many such cases he had been trying to ascertain whether immobilisation was absolutely essential. He had treated patients without fixing their joints in any way, and allowed some with hip- or ankle-joint disease to walk about, and simply adopted the plan of rubbing in iodoform ointment and giving them iodide of arsenic internally, and in some cases they got better, but rest was undoubtedly essential in the majority. He thought that it behoved everyone to use internal medication as well as iodoform ointment in cases of tuberculous joint disease. As to sprained joint he did not know whether Dr. Wilde laid stress upon immediate bandages in such cases. He (Mr. Wright) had always adopted it to prevent the marked effusion which followed, and then after the first few hours he began massage to allow the joint to be moved as soon as possible. He had found that the cases treated in this way had done very well. Two years ago he severely sprained his own ankle-joint; he bandaged the joint very tightly and also used massage, beginning a few inches from the joint in the direction of the body. The joint became very useful a few days after the accident.

Dr. PERCY WILDE, in reply, acknowledged the kindness with which his paper had been received. The question of traction was one upon which he had thought a great deal. He had been very much interested by the remarks which had fallen from the President on the question of whether immobilisation was essential. What had impressed him in connection with the question of traction and immobilisation was the remark-

able results obtained by Thomas in his treatment. At a time when all the London hospitals were treating with traction by means of weights and pulleys, Thomas treated his patients by immobilisation, and he alone made a very great and world-wide reputation. But there might be other factors which he (Dr. Wilde) could not think of at that moment. He knew that if they used traction by means of weights they got relief from pain, and he used the weight and pulley in the treatment of some spinal cases because he looked upon it as a direct sedative to the spinal nerve. He had a strong belief in the sedative effect of traction on the muscles, but was it possible to immobilise a joint and put on traction at the same time? As far as he could see, it was not. With regard to the question of bringing a limb down, he always considered that in the putting on of Thomas' splint the leg must be brought down to position, even if it had to be done under an anæsthetic. The fact of putting a flexed limb into a straight position and retaining it there was a form of traction in itself. The difficulty in the calipers was the weight. Thomas' splints were always fearfully heavy. Rigidity was obtained by an increase of the thickness of metal. He used wood when possible, strengthened by a flat piece of metal applied to its edge. (Dr. Wilde demonstrated that while both the metal and wood were flexible, when applied in this way they became rigid.) In Thomas' hip splint it must be remembered that the splint being a long straight bar from the leg to the axilla there was great danger of its bending in the centre, and therefore to get the necessary rigidity Thomas made the bar three-sixteenths of an inch thick for children, and a quarter of an inch for adults. In his own splint the "fluted" bands *alone* were three-sixteenths of an inch thick for adults, the leg and thoracic pieces being only one-eighth of an inch. With regard to flat foot the principle which he intended to lay down was that in cases of deformity they must relieve pressure. He had found this principle hold good in all deformities. In standing on tiptoe the patient must put a great deal of weight on the arch of the foot. In the exercises which were used for the deformity, they always had the patient in a recumbent position. With regard to the question which Dr. Goldsbrough had asked, what was in his (Dr. Wilde's) mind was that in cases of muscular weakness they must always stimulate the volitional centres. If patients were taught the proper method of contracting their muscles they would be cured in a quarter of the time that was generally taken.

CASES OF MALIGNANT DISEASE.¹

BY A. E. HAWKES, M.D.BRUX., F.C.S.

Medical Officer to the Hahnemann Hospital, Liverpool.

MR. PRESIDENT AND GENTLEMEN,—I beg leave to ask your attention to some cases of malignant disease, our Secretary having done me the honour of asking me to take the place of the gentleman appointed to read a paper this evening, whose absence I, like the rest of you, regret.

I beg to show you the first patient operated on in this hospital for scirrhus of the mamma.

The operation was performed by Dr. John Hayward. I have no slide to exhibit, but I well remember the clinical character of the tumour.

CANCER OF RECTUM—INGUINAL COLOTOMY.

I also call your attention to Miss A., aged 51, who was admitted into the hospital on May 19, 1900, with a history of bowel trouble.

It was difficult to ascertain how long she had been suffering from the growth, which could be reached by a digital examination of the rectum, but on admission the pain was greatly complained of, and the repeated use of morphia suppositories, to which she had resorted before admission, could not be discontinued. It was quite evident that the growth could not be removed, and she ultimately consented to have colotomy performed. This was carried out with the help of Drs. Charles Hayward and Cash Reed on June 21.

I need not here speak of the operation of colotomy in detail, but I may refer you to Greig Smith's work on Abdominal Surgery. He there describes the "method of Maydl modified by Reclus and the author," and he says that, "It may be described in one sentence as making a parietal opening, pulling the colon through the wound, passing a stiff rod through the meso-colon close to the intestine, and opening the gut either

¹ Presented to the Liverpool Branch, March 14, 1901.

at once or after a day or two." Maydl used to suture the intestine; this Reclus omitted as an unnecessary complication.

In accordance with the directions laid down by Greig Smith, the operation was performed as stated. No stitches were used, a glass rod was thrust through the meso-colon, and on the sixth day the gut was incised, no tube being used. There was a little smart hæmorrhage, which was speedily checked. The lower bowel had been well emptied by an enema, so no fæces escaped at this time. The opiates were no longer needed, and on the eighth day the glass rod was withdrawn, the adhesions being firm and satisfactory.

It may be stated that the patient is in fair health, and seemed well a short time since.

MALIGNANT DISEASE OF RECTUM.

For the purposes of comparison I have asked Mrs. M. to come for your opinion. She has suffered from some hæmorrhage; there has not been much pain as a rule, but her general health has gradually become impaired. I early detected a small ulcerating surface, as high up as I could reach, and at that time I was dissuaded from any surgical expedient. This was probably two years ago; now it is very extensive and removal is out of the question. Her chief discomfort occurs when she takes an aperient, which in her case is quite necessary, although she takes a good deal of hydrastis.

There are no urgent symptoms, and she is patiently waiting for an operation, which sooner or later will be called for.

MALIGNANT DISEASE OF RECTUM; OPERATION—INSANITY—APOPLEXY.

The next case is one that I present for your consideration with some diffidence. It will be obvious that some less radical course might have been followed than the one adopted, but when she came under observation I had been attending an old lady of about the same age, whose condition had not been made out by her attendant, no rectal examination having been suggested.

Her sufferings and the distress incident to a constant involuntary diarrhoea were painful to witness, and it was felt that such cases warranted the running of some risk.

Mrs. J. R., aged 73, presented herself at the out-patient department under the impression that she was suffering from piles, as indeed she had been informed. A malignant growth having been diagnosed, operation was proposed and consented to.

I quote from my note-book: On May 14, 1900, an incision was made from the anus to the tip of the coccyx, and room thus being gained, the tumour was caught by volsella, the rectum dissected round, except just in front where it was not necessary, and the gut drawn down, Dr. Charles Hayward assisting with hæmostatic forceps. The portion dragged down was cut with scissors, and the vessels, which gave but little trouble, were seized and tied. Deep sutures of green gut brought the surfaces into apposition, and the rectum was plugged with gauze wrapped round a catheter.

For a day or two all went well, but, perhaps at a point where a small nodule had to be removed, the gut sloughed, and ultimately there was some gaping. Healthy granulation occurred, and all that could be thought of was done to foster this process. The bladder needed the catheter, and sometimes involuntary micturition occurred. The bowels were moved after ten days with liquorice powder and occasional enemata, and more than once mechanical means were adopted. Subsequently the bladder and bowels were evacuated normally, the temperature became normal, but the pulse continued to be rather rapid. Soon it was obvious that the patient slept but little, that she talked much, and that a mild form of senile dementia existed. It was observed that at this time she was, however, particularly alive to her interests, and that her affairs, which were of some moment, occupied a good deal of intelligent consideration. Bell., hyos. and pot. bromid. were not of much advantage to her. This condition lasted till June 4. At times she was delirious, at times almost herself. The wound required but little attention, and it progressed satisfactorily.

On June 4, after a delirious night, Mrs. R. manifested symptoms of apoplexy, but by June 10 she was more easily roused and took her food well. Her condition fluctuated a good deal, but she died in spite of all that was done on July 19; hemiplegia being a marked feature in her case.

I may mention that insanity followed the removal of a very large tumour from the back of an old man, a patient in the Glasgow Royal Infirmary during my residence there.

A short article on this subject, by Mr. Clinton Dent, may be consulted in the last volume of Allbutt's "System of Medicine."

Other varieties of carcinomata and sarcomata of the rectum are rare, compared with the columnar-celled epithelioma, or "malignant infiltrating adenoma" as it is called according to Treves.

The common form only will be referred to now.

ADVANCED EPITHELIOMA OF RECTUM.

J. B., aged 56, was admitted into hospital for the second time on August 11, 1900. He was much emaciated, having been ill since Christmas with diarrhoea, much blood and mucus being passed. Constipation, however, supervened, which was relieved by enemata. The abdomen was distended; the outline of the small intestines being easily made out. *Per rectum* a large prostate could be felt, but no tumour could be reached. There was much pain to the right of the umbilicus. He continued to vomit green bilious matter; it was never black and never faecal, but vomiting occurred as soon as the food was swallowed. He was fed *per rectum* and kreasote 2 was tried. An operation was discussed, but not thought advisable, and he died shortly after his re-admission.

A large mass was found involving the walls of the rectum for about five inches. Both before and after death the growth could not be felt *per anum*; a rather large prostate, however, was easily reached. The growth was found to be adherent to other loops of intestine and to have actually ulcerated into one of these loops.

It will be readily recalled that the normal structures of the mucous membrane of the rectum consist for the most part of glands resembling those of Lieberkühn lined by columnar epithelium. In the specimen shown these glands are seen to have extended deeply into the tissues, and to have become choked up with the rapidly-growing epithelial element.

When malignant and benign growths from this locality are examined under the microscope, they are both seen to consist of this glandular structure, but in cancer the wall of

the intestine is from the very first infiltrated with the new formation. So, whether malignant or not, the structure is the same, the situation only is different (Treves).

Many references have been made to rectal examinations.

I wish I had time to refer more in detail to the structures in health and disease that can be palpated to advantage by this method.

CANCER OF THE MEDIASTINUM.

I have next to ask your attention to a most interesting case sent to me by Dr. Gordon.

I now learn that Dr. Cash Reed saw the patient once or twice for Dr. Gordon, and he saw her also just before her death.

J. S., aged 62, was admitted into the hospital on September 29, 1900. She had been long under treatment, attention having been chiefly directed to the pleural cavities. It was elicited that about a pint of fluid had been withdrawn from one pleural cavity on August 30, a smaller quantity three weeks ago, about September 12, and on October 4, five days after admission, eight ounces of thick, deep yellow, non-purulent fluid was withdrawn, and *apis mel.* 2 was administered.

On October 6 there was much hoarse cough, with frothy white expectoration. The tongue was thickly coated yellow. The pulse was 120 per minute, and, in view of a possible aneurism, the radials were often felt simultaneously, but with only negative results as to the main enquiry. The pupils, too, were uniformly symmetrical. The whole of the left side, from which I neglected to say that the fluid was obtained, was dull on percussion, and the breath sounds were hardly audible. There was no pain complained of, but the dragging experienced after tapping in pleurisy was also complained of here.

October 8.—The tongue continued moist, but in other respects the patient was in great distress. She could not lie down on account of dyspnoea; the hoarse cough continued in spite of spongia, and nothing we did for her was of much service.

It was towards the end that the colleague above named saw her in the hospital. He agreed that the condition was grave and that no help could be afforded.

In view of the *post mortem* which I proceed to refer to, it may be of interest to state that no glandular enlargements in axillæ, or mammæ, or the cervical region, could be found—in fact, there was no external aid to diagnosis available. The heart sounds were not suggestive, no aneurysmal bruit could be heard, and the muffled, poorly-heard respiratory sounds certainly did not suggest the condition we found.

I am indebted to my son for conducting the *post-mortem* examination, and for making the interesting set of slides to which I ask your attention.

The *post-mortem* examination revealed a large mass occupying more than one of the mediastinal cavities. On removing the sternum some fluid was found in the left pleural cavity; the left lung was found to be hard, firm, and collapsed, and the lower lobe speedily sank in water. In the pulmonary vessels of the lower lobe gelatinous material was discovered, and this on further examination was found to be coagulated fibrin, from which blood corpuscles were practically absent. In the upper lobe of the same side malignant extensions, growing round and into the bronchi, were discovered.

The right lung, especially the lower lobe, was firm and carnified, but it was free from malignant infiltration. It was, however, adherent to the pericardium through malignant involvement of the intervening pleura. The middle lobe was equally firm, but not infiltrated. The upper lobe was in a similar condition, but to a less marked extent.

On opening the pericardium about two ounces of fluid were found, the heart being small, flabby, and fatty, and its walls free from the growth.

The pericardium was found to be adherent to the pleura on both sides, and on the left side especially masses of the new growth invaded the pericardium. The right auricle was encroached upon, and a nodule of the growth was found compressing the pulmonary artery, while another lay between the aorta and the pulmonary artery, compressing both. A large mass of the growth was found at the cardiac base, in front of the trachea, compressing it, and growing into it at the bifurcation. Lower down the œsophagus was narrowed

and nodules were found in its anterior wall. The aorta was atheromatous, and its calibre at the arch much narrowed from pressure. In no other organ or part of the body was any similar growth found; the liver was normal in size and microscopic sections revealed nothing abnormal.

EPITHELIOMA OF THE ŒSOPHAGUS.

I have still to ask your attention to the case of D. C., aged 43, whom many of you will recognise.

He has been ailing for a few weeks only, he says. He has had a cold recently, and has lost flesh; moreover he suffers from indigestion. On admission his temperature was 100.4° F. There was some expectoration, which was free from the tubercle bacillus, and some dulness was detected in the left scapular region. He now complains of pretty constant pain from the lower part of the sternum to the umbilicus. He has not vomited since admission, but every kind of food produces pain and a tendency to retch. The tongue is red and clean; the bowels generally need help; the urine is free from albumen and sugar, and the sp. gr. is 1010. There is dulness at the left scapular region, and increased V.R. and V.F. are made out. There is much tenderness at the epigastrium, but no tumour can be felt. He has great difficulty in swallowing even after thorough mastication—arsen. 2.

A specially-prepared bougie is used occasionally, but it seldom can be passed beyond the cardiac orifice. It is easier to pass a stomach tube, and it affords the patient relief to have the stomach washed out. The lung dulness seems to vary in degree and locality, and just now the patient is heavier than when he came in.

Increased attention is being paid to the lungs, at the apices of which moist sounds are audible. There is some muco-purulent expectoration and he is taking sanguinaria. He is being fed more and more by means of the tube, and he is thus able to take about three pints of milk and some bovril daily.

I have now to ask your assistance, and I shall be glad to carry out any line of treatment calculated to relieve the patient.*

* The members of the Society were of opinion that iodide of potassium was indicated, and several made inquiry as to a specific cause.

*Subsequent Progress communicated to the Journal by
Dr. Hawkes.*

The progress of the case after the meeting may be briefly narrated. He was ordered kali hyd. grs. v. three times a day, and to be fed as before.

Some time prior to his death the breath became foetid as well as the expectoration, and kreasote inhalations were used, and he was removed from the general ward. Some pleuritic pain was complained of towards the end, but loud râles made it difficult to hear any friction sounds. After much suffering—dyspnœa and symptoms of cardiac failure—he died on March 22.

The *post-mortem* examination was made by my son.

Both apices were more or less broken down, although the cavities were not large, and the tissue of both lungs was foetid and gangrenous.

Portions of the lung sank in water.

The lower end of the œsophagus on being cut into presented a wide expanse of ulceration.

There was much foetor and the surface was rough, not much unlike a section of common sponge.

Below this dilated portion there was a very tight stricture, the walls being much thickened.

The epithelioma had led to a gangrenous condition of the lungs, most likely in consequence of the passage of foetid material into the trachea.

It is due to those who suggested potass. iodid. to say that a small cicatrix was found near the corona glandis, but specific and tubercular ulcerations are very rarely met with in the œsophagus (Coates).

The slides exhibited illustrated the following points:—

(A) A lymphatic gland from mediastinum enlarged to size of small walnut, showing in one portion normal tissue, lymphatic sinuses, &c., and the remaining portion infiltrated with small round cells without increase of stroma.

(B) Normal pericardial tissue with a small nodule of sarcomatous growth still covered by endothelium.

(C) Trachea, showing normal cartilaginous tissue, and

the mucous membrane infiltrated with sarcomatous material stained to differentiate.

(D) Œsophagus showing the invasion of the muscular coat; the mucous membrane, which is seen to be detached, remaining free.

(E) In this section of lung the growth is seen following the course of the vessels, the various coats of which are well seen. In the same specimen can be seen a small bronchial tube, distinguished by its cartilage cells, around which the growth presses.

(F) Shows lung tissue in which the alveoli are filled—although there is some shrinkage due to the absolute alcohol—with a coagulum, which has not yet been fully investigated.

(G) A thicker section to exhibit the coagula.

(H) A thinner section showing some pulmonary collapse.

INTUSSUSCEPTION.¹

BY HAROLD WYNNE THOMAS, M.R.C.S.ENG., L.R.C.P.LOND.

Surgeon to the Phillips Memorial Hospital, Bromley, Kent.

THE subject I am bringing forward for your kind consideration this evening is one which I believe has not been discussed in this Society before, and although as practitioners believing in the law of similars this is not a subject in which that law can very well be applied, still since we are denied the privilege of joining other medical societies I make no apology for introducing this question to your notice this evening, for as physicians or surgeons we may at any time meet with a case of this serious affection, and on our prompt diagnosis and early treatment will depend the issue, either for better or for worse.

Within the last few months I have had two such cases in young children, and I trust my small experience may be

¹ Presented to the Section of Surgery and Gynæcology, April 11, 1901.

of help to some of you, and from the practical experience which I hope to elicit from you to-night, I feel sure should enable us all to go forth, after this meeting, better fortified to grapple with similar cases in future.

By the term intussusception is understood the prolapse of one part of the intestine into the lumen of the immediately adjoining part; it is one of the most common forms of intestinal obstruction and roughly amounts to one-third of all forms.

Every complete intussusception involves three layers of bowel and each layer consists of the coats of the gut, namely, the serous, the muscular, and mucous coats. The *outer* layer of the invagination is called the sheath or receiving layer, and is termed the *intussuscipiens*; the *inner* or entering layer, together with the middle or returning layer, constitutes the *intussusceptum*. The apex being the junction of the inner and middle layers, the lowest point therefore of the invaginated bowel; the neck being the junction of the middle and outer layers, and therefore the uppermost part. We therefore have from within outwards the mucous surface on the inside and its serous surface outside, the latter being in contact with the serous surface of the reflected bowel, and the mucous surface of the reflected bowel in contact with the mucous surface of the outer bowel or sheath; bearing this in mind it is easy to see how lymph exuding from the serous surfaces may glue the two together, and by becoming organised make the chance of unravelling the invagination difficult or impossible.

The invagination may take place in any part of the intestine from the stomach to the anus, and may roughly be divided into (1) those of the small bowel, (2) those of the large bowel and (3) those of the ileo-cæcal segment.

(1) The *enteric variety*, that is the one confined to the smaller bowel, is most common in the lower jejunum and then the ileum, and a case has even been recorded in the duodenum.

The invaginations in the smaller gut seldom attain any great length and only involve as a rule a few inches; in one of my cases, to which I shall refer later on, these were

multiple, in fact we counted eight in all, but none exceeded three inches in length and some were only one inch long.

This multiple form often occurs during the irregular peristaltic movements that occur during the act of dying. Intussusceptions of this kind cause no symptoms during life and they are first discovered at the autopsy ; they are always small and always free from any trace of inflammation. They are most usually met with in children and rarely found in adults.

Strange to say Treves relates that when engaged in the *post-mortem* room at the Zoological Gardens, Regent's Park, he found this form of intussusception in all monkeys put to death, whereas in those that died a natural death he did not meet with a single instance.

In the obstructive form of intussusception the entering of the bowel is always towards the anus, but in this form they are often ascending or retrograde, in fact the two may be present at the same time.

(2) The *colic variety*, those limited to the larger bowel, present many varieties, the ascending colon may be invaginated into the transverse, the transverse into the descending and the descending into the sigmoid flexure ; these intussusceptions are usually short in length, due to fixity of the mesentery.

(3) The *ileo-cæcal varieties* are the most common of all and these may be subdivided into *ileo-cæcal* and *ileo-colic*. The former is the most common, the ileum and cæcum pass into the colon preceded by the ileo-cæcal valve ; the internal cylinder being formed by the termination of the ileum, the external cylinder or sheath is formed by the colon alone, while the apex of the intussusception is represented by the ileo-cæcal valve.

In the ileo-colic kind the ileum is prolapsed through the ileo-cæcal valve, the valve and cæcum remaining in their normal situations.

Except in the ileo-colic variety, in which the neck is fixed, an intussusception increases at the expense, not of the entering layer, but of its sheath, which becomes gradually inverted, the apex remaining constant while its neck is

continually changing. As the entering layer carries the mesentery with it into the sheath, a certain amount of traction is exerted upon the one side of the intussusception, and as a result the whole mass becomes curved and even flexed on itself, and at the same time the apex becomes displaced towards the mesenteric side of the intussusception, both of these conditions tending mechanically to render the occlusion of the gut more complete than it otherwise would be. The extent of bowel involved varies from a few inches to six or more feet; it is obvious that its length depends on the mobility of the colon; and, therefore, since the colon is much less fixed in the child than it is in the adult, it follows that extensive invaginations of this kind are more commonly met with in the young.

Though an invagination usually begins on the right side of the abdomen, its increase in the common or ileo-cæcal variety is mainly at the expense of the large bowel; and, therefore, by the time it has acquired sufficient size to be recognised by palpation, the tumour will be generally felt to be on the left side, and eventually the apex may appear at the anus, or may be detected by digital exploration in the rectum.

The adjacent serous layers in an intussusception soon become more or less closely united by adhesions, which when firm render the reduction of the invagination impossible; these adhesions may be limited to the neck or extend down for some distance. The sheath may become ulcerated from pressure, and perforation may even occur, but this rarely happens, for, as a rule, the sheath is not seriously affected; on the other hand, the intussusceptum is more or less strangulated, and sometimes becomes gangrenous, in which case, if the adhesions at the neck are firm, the gangrenous portion may slough and be passed per anum; but not unfrequently, during the process of throwing off the slough, fæcal extravasation takes place into the peritoneal cavity, causing the death of the patient.

In *Lancet*, 1891, Mr. Marsh reports a case in which he performed laparotomy in a case of intussusception fifteen hours only after the onset of symptoms, but in spite of the

short duration of the invagination, such firm adhesions had formed as to make reduction impossible.

In *Lancet*, 1894, Mr. Winter reports a case of intussusception in an infant of seven months, in which the bowel projected beyond the anus ; the child died on the seventh day, yet at the autopsy the invagination was easily reduced, and no adhesions of any kind existed.

But usually in cases of this kind, every day that the case is left the firmer the adhesions become ; though in the early stages they are soft and easily separated. There are numbers of cases reported in medical literature of intussusception where the inner bowel has become strangulated and gangrenous, and eventually sloughed away and been passed per rectum, the patient making a perfect recovery. In the Museum of Guy's Hospital there is a specimen showing the cæcum and the whole of the ascending colon, which were passed on the eleventh day, the patient making good recovery, and in the Royal College of Surgeons is a specimen of forty inches of ileum passed by a lady on the eighteenth day.

The *exciting cause* of intussusception in all cases is at present not known ; a large number of cases occur in children in perfect health from no apparent cause.

Some cases can be traced to diarrhœa. The case I reported in the *Review* for January came on almost immediately after passing a loose watery motion ; another case, reported in the *British Medical Journal* for November last, seemed to be brought on by a dose of castor oil, and in my second case I have little doubt that the trouble was brought on by the straining of vomiting.

Polypi have been known causes, having been found after death attached to the apex of the intussusception.

A Meckel's diverticulum has become inverted and produced the condition in question, so also has a vermiform appendix.

Masses of undigested food, such as nuts and grains of rice, have been known causes.

Sudden severe muscular exertion, gymnastic exercises, violent coughing, as in whooping cough, and even massage

of the abdomen, have all been known to give rise to this condition.

The *immediate cause* of the invaginating of the gut is not easy to explain, and many theories have been advanced with this object in view, but none seem to clear up the difficulty; there is no doubt that in some way it is due to irregular action in the muscular wall of the intestine, but the precise nature of the irregularity must at present be left an open question.

With the object of trying to settle this question Nothnagel has made some very interesting experiments on animals, and from his observations he divides them into two kinds, a *paralytic* and a *spasmodic*, the latter being the most frequent. He believes that the invagination is caused by the normal gut being drawn over the spasmodically contracted part rather than that being mechanically thrust into its sheath.

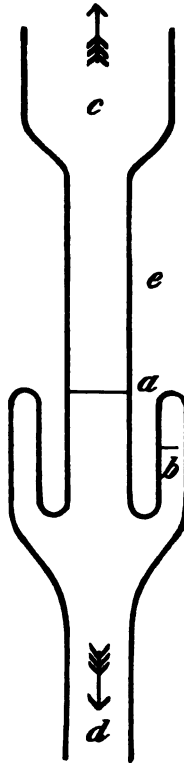
He exposed the intestines of a rabbit and passed a faradic current through electrodes, placed so close together that a perfectly circumscribed ring-like contraction was produced. On increasing the current a contraction followed which extended for a considerable distance upwards towards the stomach but only for a short distance downwards. The gut at the point of stimulation was by that time converted into a perfectly pale hard cord from contraction of the circular fibres. Proceeding upwards the segment was found to pass either gradually into the normal intestine or to end quite abruptly; in the latter instance a minute intussusception formed (the wide tube above slid a little over the contracted part below). (Note: this is not the real intussusception, but the reverse way—a retrograde form.) Such were always small and showed no tendency to increase, and were of only momentary duration.

Proceeding downwards from the point of stimulation a very different condition was met with; a proper descending invagination was found to be forming. On close observation he found the point at which the electrodes were applied to be practically a fixed point; the normal gut immediately below the contracted part turned itself upwards to a slight extent over the contracted and narrow portion. A minute

invagination was produced which increased solely at the expense of the sheath.

This mode of development is clearly demonstrated by the following experiment.

In the diagram the condition of the gut at the time of the experiment is shown.



(c) is the upper end (*i.e.*, towards the stomach).

(d) is the lower end.

(e) the contracted segment.

[From "Treves' Intestinal Obstruction."]

At a spot (a) on the bowel a fine blue thread was drawn through the serous coat and then cut short.

At another point (b) lower down a red thread was in like manner introduced.

The electrodes were applied at *a*, represented by the blue thread, an ascending contraction (*e*) of the bowel followed, while below the point of stimulation an invagination formed.

During the development of this intussusception the electrodes remained unmoved at (*a*) and the blue thread always kept at the upper retiring angle or neck of the invagination.

The red thread, however, moved gradually upwards until it reached the upper retiring angle, when it disappeared.

After a while, when the intussusception was cut open, the red thread was found about the middle of the middle layer.

The invagination so produced existed for a certain length of time and then disappeared as the gut became restored to its normal condition.

Nothnagel found that stimulation of the bowel above the intussusception had no effect in promoting its unfolding, while stimulation of the sheath merely caused the invagination to become all the more rigid. Stimulation, however, of the gut below the involution caused an ascending contraction by means of which the intussusception was at once relieved.

Thus in one case when an invagination of the colon had been artificially produced, it was made to disappear by an antiperistalsis induced by an enema of a solution of common salt.

The experiments described so far refer to the spasmodic variety; he also made experiments in the paralytic kind.

He crushed a segment of bowel three to six inches in length, entirely paralyzing it; when the electrodes were applied *above* the paralysed portion nothing followed, except the usual ascending contraction; when, however, they were applied to the gut immediately below the inert segment, typical descending intussusception developed. This invagination grew solely at the expense of the normal gut; the paralysed part was not concerned in it, the electrodes remaining quite unmoved at the original place of application, just as occurred in the previous experiment at the mark of the blue thread. These researches serve to demonstrate so far

as they go the existence of both a spasmodic and a paralytic form of intussusception.

He considers that the former variety is infinitely more common than the latter, and the evidence afforded by the clinical observation would support his opinion. The distinction between these two forms is not of material importance, the simple fact remaining that intussusception depends on irregular action in the muscular wall of the intestine. There are but few clinical facts to support the existence of a paralytic form of invagination; it may, perhaps, be considered for the present as a laboratory experiment.

These experiments should serve to correct the common impression which exists as to the production of invagination.

There is no driving of a contracted segment of gut into the non-contracted part below by the "propulsive action of the intestine." Peristalsis of the bowel above the contracted portion appears to have no influence in the formation of the intussusception, and it is a question rather of one piece of gut being *drawn over* another than of one being thrust *into* the subjacent segment.

The symptoms which would lead one to suspect that one had to deal with a case of intussusception are the following: Sudden onset of symptoms; even in chronic forms of the disease there are often violent and abrupt symptoms at the commencement of the case. The symptoms may come on during perfect health, while at rest, and even during sleep. As a rule both in acute and chronic cases the first symptom is *pain*: sometimes the initial attack of pain reaches at once the maximum of that felt and subsequently is more moderate; but usually, however, the pain gradually increases in severity up to a certain point, and then begins to subside. While the invagination is going on, and while strangulation is active, the pain may be acute, but when the parts have become fixed by adhesions, and more especially when gangrene has set in, it becomes greatly modified. The pain is colicky, and its great feature is its occurrence in paroxysms; intermittent pain in abdominal conditions nearly always indicates an incomplete obstruction, and intussusception is a good example.

In very acute cases the pain may be almost continuous, but there are definite exacerbations; as a rule the more congested and strangulated the bowel the acuter is the pain; the paroxysms are often very regular in their appearance, sometimes being every fifteen or twenty minutes, though the interval is said to be shorter in invagination in the smaller bowel than in the larger, and at the same time the pain is more severe.

Vomiting is not nearly so conspicuous a symptom as it is in other forms of acute intestinal obstruction, such as strangulation by bands, volvulus, &c.; it does not appear so early, is seldom very distressing, and less often stercoraceous; it is present in not more than 25 per cent. of cases, and may be absent during the whole course of the malady.

The state of the bowels presents some very distinct characters. As a result of the violent peristaltic action excited by the invagination, diarrhœa is a common condition, and as a consequence of the great engorgement of the contained bowel, the motions are often stained with blood; if the lumen is so far obstructed as to prevent fœcal matter passing through, the evacuations may consist of bloody mucus simply. Absolute constipation is seldom met with in intussusception; in a large number of cases diarrhœa comes first, followed by constipation later on as the obstruction becomes more complete.

The appearance of blood is a most important sign, and the more acute the case the more conspicuous is the hæmorrhage. In 80 per cent. of cases it is present. The amount of blood is not, as a rule, excessive, and is dark and clotted; it is most marked in the early stages.

Constitutional symptoms are much the same as in other cases of strangulation by bands; collapse is often marked in infants, especially if the case is a very acute one.

Temperature is often subnormal, due to shock, in the early stages, but may rise later. It is not a reliable sign; there may be rise of temperature quite independent of local peritonitis.

Tenesmus is usually a marked and important symptom.

It is more marked the more acute the condition. The frequency and severity of the tenesmus depend mainly on the nearness of the invagination to the anus. It is marked in conditions where the large intestine is involved, but often absent in cases where the affection is confined to the smaller bowel. Tenesmus is usually an early symptom and may be the most distressing of all the symptoms, and, as the invagination occupies the sigmoid flexure or rectum, may cause complete paralysis of the sphincter ani, producing patulous condition of the anus.

Tension of the abdominal walls is not as a rule met with in intussusception, anyway not until the later stages, when the condition has existed for some time and some local or general peritonitis has existed.

Local tenderness.—At first the abdominal parietes are not tender to pressure, in fact pressure is often comforting to the patient. Later on the abdomen becomes tender on pressure over the region of the invagination, due to the engorgement and commencing inflammation.

An abdominal tumour.—The presence of a tumour formed by the invaginated mass, to be felt either through the abdominal wall or per rectum, is of very great diagnostic value. It is felt according to Treves in about 50 per cent. of all cases, and most frequently in ileo-cæcal and colic varieties. It is usually more distinct in children than adults, because the abdominal parietes are thinner and it is therefore more easily felt; of course the swelling varies very much in size, maybe from the size of an egg to the thickness of the forearm, it is cylindrical and often described as sausage-shaped; it is as a rule curved from the tension of the mesentery. It must be remembered that the swelling cannot be detected when situated in the hepatic or splenic flexures; this is important, or you may think that the invagination has been rectified, when, after an enema, you find that the tumour has disappeared, as I did in a case I shall refer to later on, when, in fact, it had only been forced back into the splenic flexure. In consistence the tumour feels hard, but may vary in density, as during attacks of pain it may grow larger and harder, while during the intervals it is

often less distinct and softer. In no case should a tumour be pronounced as absent until the abdomen has been examined during a paroxysm of pain.

A tumour in the rectum.—In a large number of cases a tumour can be felt in the rectum; this occurs much more commonly in children than in adults, and in the former it reaches the rectum much more quickly owing to the greater mobility of the child's colon. It has been known to appear within a few hours and to be one of the earliest signs of invagination, but as a rule the tumour does not appear in the rectum for four or five days. The gut not unfrequently protrudes beyond the anus and on more than one occasion has been mistaken for prolapse, for rectal polypus, and piles, and has been even cauterised or cut off. There is a remarkable case recorded in the *Boston Medical Journal*, July 6, 1876, where, in a man aged 60, the tumour, prolapsed beyond the sphincter, was taken for a cancerous growth and removed *en masse* by the galvanic wire and found to be a piece of greatly hypertrophied ileum with the ileo-cæcal valve. Strange to say the patient recovered and was relieved of a constipation from which he had long suffered.

Now before speaking of treatment let me impress on you to be on your guard, when a mother brings her baby to you saying that it has passed blood with its motions, to carefully go into the history of the case, for babies so frequently cry and bring up their food that mothers are not alarmed till they find the child passing blood by the bowel; but if you find on enquiry that the attack began suddenly, that it screamed, became faint and was sick soon after feeding or going to stool, be very careful to eliminate the chance of intussusception, or by the time of your next visit the golden opportunity of saving that child's life may have passed by: and remember that it is quite possible for the child to have diarrhoea with intussusception instead of constipation, that all the usual symptoms may be absent, there may be no history of screaming, faintness or vomiting, but simply the passing of blood and slime, and that it is possible for a child to have intussusception and yet pass no blood by the bowel. The child may seem only weary,

somewhat distended, vomiting now and again, and it may have passed several normal motions. In such cases the condition may very easily be overlooked, but if the intussusception is acute within twenty-four hours there will nearly always be symptoms of intestinal obstruction.

TREATMENT.

Having decided that you have a case of intussusception to deal with, if you are not going to undertake the case yourself, either send it at once to a hospital or call in the aid of a surgeon; do not tamper with the case and give morphia and wait to see if the thing will right itself; do not delude yourself with the hope that as the symptoms are not urgent time may bring about a cure, that nature will right herself by undoing the mischief she has done, or perhaps perform a plastic operation and throw off a slough. Don't delay by giving your small doses of nux vom. or coloc., veratrum or whatever you consider the simillimum.

At one time cases were treated by injections, and if not successfully, allowed to die. Now in these days of antiseptic surgery we have no fear in opening the peritoneal cavity; many men advocate doing a laparotomy at once without injecting. Personally I would say give the patient first an anæsthetic and when well under slowly inject from an irrigator some warm salt water, at the same time noticing the effect it has on the tumour through the abdominal wall. In most cases it will undo the invagination to a certain extent if not entirely, and even if it is necessary to perform a laparotomy afterwards it diminishes the amount of bowel to be manipulated and therefore causes less shock. If you feel pretty sure that the whole thing has gone back, nothing more remains to be done except carefully watching to see if it should recur, but if still in doubt and your patient is some distance away, make a small incision in the median line between the umbilicus and the pubes and introduce the finger and satisfy yourself that all is right: if it is not wholly reduced it is a simple matter to continue your incision upwards and bring the bowel which is invaginated to the

surface. Having exposed the tumour squeeze up the intussusception from below and do not try to pull out the bowel from above, or you may find the gut giving way and tearing. If the case is of some standing and adhesions have already formed and you are not able to straighten it out, the only thing to do is to resect the bowel. This may become necessary also if when the bowel is unravelled it is found to be gangrenous. This is not always an easy point to decide as the gut is usually very discoloured, but it has a wonderful way of recovering itself. Still, if the peritoneal covering is still shiny it may generally be left; if, however, it has lost its polish it should be considered past recovery. Resection may be performed by stitching the two cut ends of the bowel end to end, or by sewing up one end of the bowel completely and making an opening into it at the side and stitching the other raw end of the bowel over that, so that it enters at right angles, much as the small bowel enters the large bowel at the ileo-cæcal valve. I must say that resection increases the mortality 50 per cent., but it is better to give the patient that chance than to leave it unrelieved.

After-treatment is important in babies and very young children. They cannot go for long without food, so after the first few hours they must be fed with small quantities at frequent intervals, babies still at the breast may be suckled, the mother bending over them so that they are not lifted from the bed; or if they have been weaned, by milk and barley-water or sterilized milk; and it is well not to keep babies too long on their backs, they should be rolled over to one side or the other and after a time may be carried about. The stitches should be left in for nine or ten days and not all removed at the same time. Usually for twenty-four hours the patient will continue to pass blood; this, having been the last of the bleeding before the obstruction was relieved, takes some little time before it finds its way down to the anus.

Before relating two cases to you, there are one or two points on the question of treatment I would like to mention, (1) concerning the administration of *Morphia* in these cases. If the pain is severe or the patient is suffering from collapse,

I think some morphia should be given ; it undoubtedly eases the pain, and with the subsidence of pain the more striking manifestations of collapse become less marked ; not only is the pain lessened but the pulse improves and the temperature becomes more normal, the pinched expression is generally lost, the eyes are less sunken, the tongue becomes moist, the whole body becomes warmer, and patient more comfortable, the urine, which may have been suppressed, is again secreted. It diminishes peristaltic action, and thus gives the bowel a chance of righting itself ; anyhow it diminishes the chance of the obstruction increasing. No doubt if given early some cases are cured, and there are many cases in old days reported which have got well under opium.

Nevertheless, though morphia is of great value in relieving the more urgent and distressing of the symptoms, it must be remembered that its use may so modify the symptoms and so affect the general aspect of the case that the characteristic manifestations of the malady may be obliterated, so that it must be used with discretion, and the smaller the quantity used the better. One-sixth grain of morphia given hypodermically will relieve the pain and collapse for a time, and if required it may be repeated in a couple of hours ; this is better than giving larger doses, for " a small dose can be added to, but a large dose cannot be taken from."

(2) Evacuation of the *lower bowel* as soon as possible (if you give morphia, wait till it has taken effect) ; give a small enema to clear out any fæces that may be there ; by emptying the bowel it will prepare the way for a nutrient injection if this is thought necessary, or for giving stimulants or water to allay thirst, as no food or liquid should be given by the mouth, as anything given by the mouth will only produce vomiting, or if it should be retained in the stomach it is very doubtful if it can be absorbed, and at the same time is likely to increase rather than diminish peristaltic action.

Let me now briefly report two cases which I have had to treat within the last few months. The first case was an infant of five months old that I operated on within eight



hours of the onset of symptoms. In this case the symptoms were typical and the child recovered. The second case I saw with Dr. Madden, where the symptoms were very obscure, and though operation was performed and the invagination relieved, the child died.

Case 1.—Fine, healthy boy, weighed ten pounds at birth; very happy, contented baby—never ailed anything; bowels acted regularly, motions soft and good colour.

Aug. 1, 1900, 3 p.m.—Had a loose, watery, yellow motion, and almost at once screamed and turned deathly white. I saw him at about 4 p.m. and found him very pale and cold to the touch. Every few minutes he would cry out and throw his arms and legs about as if in great pain, then become quite quiet as if exhausted. I could not count his pulse as it was difficult to feel at all. He vomited a little curdled milk while I was present (the only vomiting that occurred throughout the illness). I gave him a hot bath, wrapped him in a warm blanket and mixed him some cham. 1x, to be taken every fifteen minutes. 5.30 p.m.—Father came round to say he thought the child was dying and that he had passed some blood by the bowel. On arrival I found him less collapsed. Temperature, 98°; pulse, 140. A sausage-shaped swelling could be made out in the left side of the abdomen; no special tenderness. Examination per rectum brought away some dark blood, but nothing could be felt. Under chloroform, administered by Dr. Madden, I injected warm water slowly from a douche can, and inverted the child, but the water returned with considerable force. After several injections the swelling in the abdomen had disappeared, and I hoped that the bowel had righted itself. 10 p.m.—The child seemed as bad as ever; the swelling was more marked than before, and was now visible to the eye. I therefore removed him to the Phillips Memorial Hospital, and, under chloroform given by my colleague, I made an incision in the middle line from the umbilicus to the pubes. On opening the peritoneal cavity bloody serum welled out, and on passing in two fingers I had no difficulty in feeling a large hard coil of gut occupying the left side. On enlarging the opening upwards I was able to draw out about a foot of the larger bowel, which contained invaginated gut; this I managed to unravel by squeezing back the intussusceptum, and at the same time drawing down the sleeve over it; finally the ileo-cæcal valve and appendix appeared, very congested and of a port-wine colour. Not wishing to prolong the operation I returned the bowel and

appendix without excising the latter, and stitched up the peritoneum with a continuous suture, and then the parietes by interrupted gut sutures, dressed the wound with cyanide gauze, and put the child to bed.

Aug. 2.—Three hours after the operation the child was given two ounces of milk and water which was repeated every two hours. Temperature rose to-day to 100·6°, but was normal by evening, and during the remainder of the stay in hospital it was below normal, except on Aug. 6, when it reached 99°; pulse, 150. Passed blood twice to-day, but no fæcal matter; seems much better. Bell. 3c, merc. cor. 3x, alternate two hours.

Aug. 3.—Dressed wound, as lower dressings were damp from urine; passed a grayish-green motion.

Aug. 4.—Bowels acted three times; child seems very well. Pulse, 140. Milk, two ounces, barley-water, two ounces, every three hours.

Aug. 13.—Removed stitches; wound quite healed; bowels acting daily.

Aug. 21.—Went home.

When I saw the child last, at the end of March, it was quite well, and had continued well since leaving hospital.

Case 2.—A plump, healthy child of 4½ years; since birth was inclined to constipation, but had never had any ailment.

First seen on Tuesday, Dec. 18, with the following history.

On the previous Saturday was sick twice in the evening, but no pain or anything to alarm the parents.

Sunday, seemed quite well, no sickness; went out walking twice; was given only a little Benger's food.

Monday vomited twice in morning, but in afternoon seemed very well, was romping and playing with the others.

Tuesday morning vomited several times and retched violently; my partner saw her at 11 a.m., was then asleep. During afternoon was sick again and a slight red discharge like catamenia appeared from vagina; child complained of stomach ache. 5.30 p.m., vomited a coffee-ground fluid. Temperature, 99°; pulse, 132. I saw her then, she looked ill, but examination of abdomen, which was quite soft, showed nothing; examination per rectum revealed nothing. An enema was given, resulting in a little natural motion being passed. 10 p.m., Dr. Moir kindly came down and diagnosed intussusception and advised operation if no better in morning.

Wednesday, 19.—The patient was evidently getting worse, temperature 99°, pulse 180, so we telegraphed for Mr. Shaw and he came down, and at 10 a.m. performed laparotomy and found

no less than eight distinct invaginations in the small bowel; all were small, none more than three inches in length. They were all easily straightened out. Some large glands were discovered in the mesentery of the larger bowel of a tuberculous nature. The operation lasted altogether one hour, but the child seemed to stand it well; nutrient injections of bovine and brandy were given, but the patient continued to vomit dark blood and did not retain the injections; she gradually sank and died about 8 p.m.

A *post mortem* was made next morning, but no fresh involutions were found and nothing else to account for the unfortunate ending but shock.

The lesson to be learnt I think from these two cases is early operation, and I cannot help thinking that if we had performed laparotomy on the second case on the Tuesday night instead of waiting till the next day, the child might have recovered.

I would like to ask your opinion as to whether you think the enlarged tuberculous glands may have had anything to do with the causation of the intussusception, or of the constipation beforehand; also if you think that keeping the child on very little food may have had anything to do with the invagination of the bowel.

Mr. DUDLEY WRIGHT (from the Chair) thought Mr. Thomas' paper had been most instructive, and was replete with practical points. The author was to be congratulated on the success of his first case, which was undoubtedly due to the early steps taken to deal with it.

Dr. ROBERSON DAY mentioned two interesting cases, one in the advanced and one in the early days of life. The first occurred in his father's practice some years ago. The patient was a gentleman about 70 years of age, evidently suffering from intussusception. He had the usual symptoms of intestinal obstruction, *e.g.*, vomiting and constipation, and although no tumour could be made out it was suspected. All arrangements were made for an operation, but the case took quite a dramatic turn. The surgeon was summoned, and he appeared, but at the eleventh hour the symptoms amended, the vomiting ceased, the patient had a natural motion, and shortly after passed what was evidently the necrosed portion of the bowel. He did not mention this case as a plea for delaying operation,

but because he considered it one of those very rare cases to which the writer of the paper had alluded. In the other case the end was not so fortunate. The nature of the patient's illness had been overlooked in the first instance, partly owing to the parents being absent from town, and the baby, a girl, aged 8 months, being left in the charge of a nurse. It was suddenly taken ill with vomiting and abdominal pain (on a Saturday), but the doctor was not summoned until the following day, and then he temporised. He (Dr. Day) was called in in consultation and saw the child on the Tuesday following. He was urged to hasten his visit, which he did, but unfortunately before his arrival the child had expired, and he only had the melancholy satisfaction of assisting at the *post mortem*. On opening the abdomen the usual and more common variety of intussusception was discovered; the cæcum had invaginated into the ascending colon on the right side, and about an inch of the vermiform appendix was appearing out of the neck of the tumour. The symptoms had been somewhat obscure, but there had been the bloody discharge from the rectum, a point which the writer of the paper had very justly insisted upon as one of the utmost value and one which should never be overlooked. If an infant had symptoms of blood coming from the rectum, no matter whether connected with diarrhoea or not, it should be most carefully examined under an anæsthetic, because the best time for treatment was during the first twelve hours. If that time had passed by the mortality rose by leaps and bounds.

Mr. KNOX SHAW thought the author should not be too optimistic as to operative measures because he was fortunate enough to cure his first case. He (Mr. Shaw) had operated on three cases of intussusception, and all three had died. In one case he had to resect a large portion of the ileum and cæcum. With regard to Mr. Thomas' second case it was said that multiple invaginations were only met with in the *post-mortem* room. He had wondered since whether the number of invaginations met with in that case should not have induced them to give a very grave prognosis, because in all probability the patient was practically semi-moribund when the operation was performed. The symptoms were really due to the advanced stage of the disease, and not to the number of invaginations.

Dr. MACNISH referred to a case of a child he had had under treatment for some time. The child from birth had suffered from acute attacks of intestinal colic, while every three or four

months there was a discharge of blood and mucus from the bowel. He was informed by the mother that the discharge was attended with collapse, and the child presented all the symptoms typical of intussusception. When he saw the child it looked well and bright, but after an acute attack of the colic it would be very seriously ill. The mother objected to any form of surgical treatment, and it was going on fairly well with the usual recurrent attacks. He asked if the author could give him an idea if there were any chance of the child being ultimately cured by medicinal treatment or whether an operation would be necessary.

Mr. DUDLEY WRIGHT said that if Mr. Thomas referred to a paper written by Mr. Bruce Clarke about three years ago in the *Lancet*, he would find an answer to his question about the mesenteric glands. It was a very common thing indeed to find in cases of intussusception enlarged glands of the mesentery, which Mr. Bruce Clarke had pointed out, and their relation to it. Dr. Day's case of intussusception in an old patient was very interesting. Intussusception was rightly associated with children more than with adults, and probably the reason for its common occurrence in children was the fact of the extreme mobility of the whole of the intestinal tract in them. The cæcum in the earlier stages of the embryo was up on the left side, and it had to travel from the left splenic region to the right lower region of the abdomen. On its passage it must have a pretty long mesentery, which in later life it did not have. There was also noticeable the increased mobility of the rectum in childhood and the possibility of prolapse, in fact total prolapse of the rectum was quite common in childhood; in adults it was very rare. Dr. Burford and Mr. Johnson had pointed out in their paper on peritonitis, that in cases of extremely rapid pulse the rule should be to withhold the knife when it was seen that the sepsis had gone so far that the patient's prospect of recovery was practically *nil*.

Mr. WYNNE THOMAS, in reply, thanked the members for the kind way in which they had spoken of his paper. Mr. Shaw had told him not to be too hopeful in operating on cases of intussusception. In the case in which he performed the operation he saw the child from the very beginning, and consequently had it under the most favourable conditions. No doubt it was because he decided to operate quickly that the child got well. In answer to Dr. MacNish, if the parents refused an operation

of course one could not operate, but he thought the better plan would be to try and persuade the mother that she was running a very great risk in leaving the child, and that if she could bring her mind to it it would be better to perform an exploratory operation. Laparotomy was not a dangerous operation, and he thought from the symptoms given by Dr. MacNish there was very little doubt the child suffered from attacks of intussusception. There was no doubt that cases did get well of themselves, but a case might be left too long and an acute attack come, which the patient would not get over. The question which Mr. Dudley Wright had raised as to when one should give up all idea of operation was very difficult to decide, and one on which surgeons would very much differ. One hardly liked to stand by and see a patient die, and unless the symptoms showed that an operation could not possibly be of any good one might afterwards feel that if an operation had been done the child might have got better.

A STUDY OF 153 CASES OF DISEASES OF THE BREAST.¹

BY C. KNOX SHAW.

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DISEASES of the breast present an ever-interesting study to the thoughtful medical student. They are of frequent occurrence, of much concern to the patient, and, owing to their well-known difficulties in diagnosis, are perplexing problems to the clinician. Then there is the answer we should give to the question which is sure to be asked us when consulted as to a swelling in the mammary gland, "Is it a cancer?" and "Can I be cured of it?" Nothing is more instructive than to find leisure to carefully compare groups of cases we have seen. We have our impressions, but a study of the course of the disease subsequent to medical or surgical treatment carries our impressions on to the safer ground of ascertained facts. I propose that this paper shall be essentially clinical, conveying my personal

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observations on cases that have passed through my hands. During my connection with the London Homœopathic Hospital I have not had charge of surgical out-patients, so that most of the cases I have been re-studying are of the severer type that necessitate residence within the walls of a hospital.

Beginning with the simpler cases of mammary disease, I shall first describe a few cases of abnormalities in development.

HYPERTROPHY.—Among my cases there are three interesting ones of hypertrophy of the breast, two in young girls aged 14 and 18, and one in a young man aged 19. In the case of Fanny W., aged 18, who was in the hospital in 1891, the mammæ developed considerably with the onset of menstruation. The left breast was full for a girl of her age, but the right was very large and heavy, and hung down almost to the level of the umbilicus. Under rest, elastic bandaging and belladonna locally, and clematis 1x internally, she made great improvement. The second case is particularly interesting, as it tends to support the view that this hypertrophy is not an increase in true gland tissue, but rather an affection of the lymph spaces. She was seen in 1898, and was under observation for a long time. The hypertrophy was almost entirely right sided, and accompanied with enlarged glands in the axilla; for a time there was extensive lymphatic œdema of the arm and forearm, so much so that she had to carry her arm in a sling. She had never menstruated. She was given many remedies, and pressure was kept up continuously for a long time; and when she was seen by Dr. Blackley at his out-patients' a few months since, the breast had considerably diminished, she was menstruating regularly, and was about to be married. The discomfort at one time was so great that she begged to have the breast removed.

Hypertrophy of the breast in men is generally associated with an effeminate appearance or some sexual aberration, but Mr. G., aged 19, who was seen in 1893, seemed a normal young man, except that his left breast was as full as a girl's. A year later the breast was a normal size. In 1895 his right

breast was as large as his left had been. Somewhat allied to these cases is the irritable breast of young girls at the onset of puberty. Florence F., aged 12, was in hospital in 1891. Her right breast had become large and painful. The breast was tender, but not indurated at all; in fact, there was such a sense of fluctuation that an exploring needle was used to make sure there was no fluid. She was treated with bryonia, glycerole of belladonna, and cotton-wool compresses, with relief to her symptoms.

Next we come to the acute inflammatory affections of the breast, ending frequently in mammary abscess.

ABSCISS.—Abscess, in one or other of its varieties, accounted for thirteen cases. One usually associates this condition with the puerperal state, but in only two—in women aged 29 and 30—was this the cause, both cases being admitted five weeks after their confinement. It is really difficult to explain the cause in some of the cases. In 1890 a woman, aged 60, was in hospital with a large abscess of the left breast, three-quarters of a pint of pus being evacuated. She had not long recovered from a right-sided hemiplegia, and she had a colon full of impacted fæces. Two other somewhat similar cases were seen, one in 1887, in a woman aged 50, and another in 1896, in a woman aged 47. A young girl of 16 was in hospital, in 1888, with a troublesome abscess, for which we could assign no cause. A blow seems to have been the direct cause in two cases in women of 28 and 38. In both these cases the history pointed to a hæmatoma following the blow, and suppuration taking place subsequently in that. In the puerperal condition the origin of the infection can, in probably all instances, be traced to the nipple, and it is possible that, in investigating these doubtful cases, if we were to make a more minute examination of the nipple, we should find some excoriation. Early in 1900 I saw Mrs. S., aged 34, with a painful indurated right breast and a retracted nipple. On everting this it was found to be excoriated and bathed in a semi-purulent secretion. Under treatment this got well, but in the autumn the condition returned; there was local mastitis, and subsequently an abscess formed. Only once was a true sub-

mammary abscess found. In 1891 a single woman, aged 25, was in Durning Ward. Her right breast had been gradually getting more prominent and tender for nine months. There was a large ovoid swelling at the upper part, but no redness nor especial tenderness. There was distinct fluctuation, which extended beneath the breast to its lower border. There was no induration of the mammary gland itself. Half a pint of pus was evacuated, and the patient made a good recovery. According to Shield, a true submammary abscess is quite the exception. A few years ago I saw in Vaughan Morgan Ward a young girl with apparently a submammary abscess, but which, on opening, was found to be caused by tuberculous caries of a rib beneath the breast. In 1897 we had in Durning Ward a woman, aged 31, who was admitted for a chronic discharging abscess of the breast, but which was found to be an unrecognised empyema, which had discharged itself by an opening just below the nipple.

It is scarcely necessary to dilate upon the medical treatment of abscess of the breast. I have nothing fresh to add. The surgical treatment needs two points of emphasis. First, we should lay particular stress upon prophylactic measures: great care must be taken of the nipples in the later stages of pregnancy and in the early days of nursing. I feel sure that lead shields are helpful to excoriated nipples. Secondly, when the abscess has formed it should be opened early under an anæsthetic, so that all pockets can be laid open, and the cavity freely drained; a simple rapid puncture is rarely successful and liable to end in a troublesome sinus.

TUBERCLE.—We must never forget the possibility of tubercle infecting the breast. Of this affection I have notes of two undoubted cases, and one probably tubercular.

In January, 1897, a single woman, aged 28, was in hospital. In 1895, after influenza, her right breast became painful and swollen, this being soon followed by a discharge from the nipple. The swelling and discharge recurred several times. About a month before admission the left breast became similarly affected. There was a small abscess a little to the right of nipple, with reddened ulcerated skin over it. A cord-like induration could be traced from the abscess to the nipple, which was inverted and

somewhat eczematous. A hard semi-fluctuating swelling was found internal to the left nipple, which was like its fellow in appearance. Both abscesses were opened and thoroughly curetted. Another time I should freely excise the affected area. She left the hospital February 10. Not long afterwards the abscess returned, and she was sent by her mistress to Guy's Hospital, where she was operated on four times, the condition returning each time. Finally, in March, 1898, both breasts were amputated at Guy's. I saw her in January, 1899, when she was quite well and had sound scars.

I saw a very similar case in June, 1900, in a married woman of 30, without children. She had had a constantly recurring small abscess just above left nipple, which had been incised several times by her own doctor, and once I had very thoroughly curetted it.

On her admission I deeply excised the whole area together with the nipple, for I found one of the ducts filled with soft gray gelatinous material leading from the abscess cavity to the centre of the nipple. Dr. Watkins reported that the portion sent him for examination gave no evidence of tubercle, but in spite of that I am inclined to include this among the tubercular cases. At present this patient is quite well and there is no return.

Though not leading to abscess, the following is a very interesting case of tubercular disease. It was much more general than is usually the case, and thus led to an error of diagnosis.

Mary T., aged 55, was admitted into Durning on June 27, 1898. She was a single woman, with a good family history, and had had no illnesses till a year ago, when she noticed a swelling in her right breast which had painlessly increased in size, but for the past six weeks it had apparently somewhat decreased. She had been taking phytolacca under Dr. Goldsbrough's direction for four months. There was an infiltrating tumour at the inner side of the right breast about the size of a walnut, the skin over it was puckered, and the breast appeared to be adherent to the pectoral fascia. No apparent enlargement of axillary glands. A diagnosis of carcinoma was made. On June 28 breast and contents of axilla were removed, and as the tumour was adherent to the pectoral fascia the greater part of the muscle was removed. She left the hospital July 8. The Clinical Research Association re-

ported: "This section consists of young inflammatory tissue, in which are embedded a few typical gray tubercles and areas of caseation. The lesion is evidently due to tuberculosis." In February, 1901, the patient was perfectly well.

CHRONIC MASTITIS.—There is a class of case, chronic mastitis, in which a real difficulty of diagnosis exists. It is a form of lobular induration of the breast met with most often at the menopause, but may occur at almost any age. It is particularly interesting in view of the question raised as to such a condition becoming ultimately carcinomatous. Some of my cases go to support this view, but clinically it seems at times to be impossible to distinguish between early simple induration and that caused by cancer invasion. In these cases examination with the flat hand is all important, areas of induration resembling carcinoma felt on pinching up the breast disappear when the hand is laid flat on it; and in true chronic mastitis there is want of a circumscribed boundary. It should be remembered that in chronic mastitis the axillary glands may be enlarged and tender. These are the cases that do so well under treatment, and I am sceptical enough to think that they account for a good many of the so-called cures of cancer by medicine. I have notes of three cases only which can be legitimately called chronic mastitis, of which the following is an example:—

Mrs. B., aged 38, was seen November, 1897, having lately had gynæcological treatment. A month previously she had received a blow on the left breast which remained very painful, and she found a swelling at the axillary border of the gland. She was very anxious about herself as an aunt had died from cancer. The breast was tender at its axillary border, and there was some induration; both nipples were retracted. She improved in two weeks after being ordered *phytolacca*, under which all induration disappeared. She was examined nine months later, and the breast was quite well, and she had remained free from breast trouble up to 1901.

The next two cases will repay careful comparison.

Miss E., aged 47, was seen in February, 1897, complaining of a rapidly-increasing painful swelling in her right breast. She

had been, by Dr. Moir's advice, taking phytolacca and using it locally. The upper third of the right breast was indurated, and in the centre seemed an area of softening. There were enlarged glands in the axilla, right up to the clavicle, and the breast did not move freely over the pectoral muscle. The patient had lost flesh. A diagnosis of a soft rapidly-growing carcinoma was made. The breast, axillary contents and the costo-sternal portion of the pectoralis major muscle were removed. The microscope showed extreme fibrosis of glandular tissue with lobular mastitis and moderate dilatation of the smaller ducts. There was no evidence of malignancy. The patient married a year later, and is well at the present time.

Laura R., aged 45, was admitted into Durning September, 1896, for a slowly-growing tumour of the left breast of twelve months' duration. There was an irregular tumour about the size of a pigeon's egg infiltrating the upper part of the breast; the skin was not involved, but the axillary glands were enlarged. Before removing the breast a preliminary incision was made into the tumour, and as it presented all the clinical characteristics of carcinoma, the breast, costo-sternal portion of pectoral muscle and contents of axilla were removed. The growth extended to the pectoral fascia. The Clinical Research Association pathologist reported that the section had the character of lobular induration,—the lobules being imbedded in fibrous tissue, this tissue having invaded the lobules themselves. There was no evidence of malignant disease. She was seen in December, 1898, two years later, when there was very definite and somewhat extensive recurrence in the pectoral muscle at the apex of the scar, so much so that a secondary operation was considered inadvisable. The microscopical diagnosis was subsequently confirmed by Dr. James Johnstone. Before deciding that this case was not malignant when operated on we have to bear in mind that in making a microscopical diagnosis it is rarely that the whole of the breast is examined, a small portion is usually selected by the eye, cut out and hardened. It is therefore possible for the carcinomatous deposit, if only in an early stage, to be missed.

FIBRO-ADENOMA.—We have next to consider what are known as innocent tumours of the breast, and of these I have only examples of the variety known as the fibro-glandular tumours, or fibro-adenomata. Their characteristics are: their appearance in early maturity, their slowness of

growth, and that they are dense, lobulated and encapsuled. Fibro-adenomata, however, may undergo cystic degeneration from mucoid change or duct-obstruction. There are notes of thirteen cases, five occurring under 30, five under 40, two under 50, and one under 60 years of age. Twelve of these were simple fibro-adenomata, of which eleven were removed by enucleation. They were firm, lobulated encapsuled tumours, and as far as I can learn have never recurred. Four cases require more special mention.

Mrs. H., aged 35, had had a small tumour in her left breast since 12 years of age. At her first pregnancy the tumour enlarged. At her second confinement the tumour increased rapidly and reached the size of a pigeon's egg. The tumour was now removed and consisted of a small adenomatous mass with a large thin-walled cyst containing "clotted cream-like" material. The microscope showed it to be an adeno-fibroma which had undergone cystic degeneration in parts.

Ellen D., aged 53, in Durning, November 26, 1898, had noticed the tumour two years previously. There was a large smooth elastic tumour in inner half of left breast; the skin was not involved, and the axillary glands were apparently not enlarged. On exposing tumour at operation it was found to be of a soft vascular nature, and the whole breast, pectoral fascia and contents of axilla were removed. On further examination the tumour was found to be encapsuled; on section there were numerous cysts of varying size and smooth walls; these cysts were packed tightly with thick villous projections of considerable size. The Clinical Research Association reported the tumour to be a cystic fibro-adenoma. The cysts were filled with polypoid intracystic protrusions of the stroma. Many of these protrusions were very cellular and traversed by small vessels, but there is no proof of malignancy, and the nature of the tissue is like that of a soft fibroma. She left the hospital on December 25. In February, 1901, she was in good health and had no recurrence of the growth.

Fibro-adenoma was observed once in a man. In 1892 I saw a gentleman who complained of a tender left breast which had an indurated nodular feeling, and for which he had been taking phytolacca. The condition was considered to be a chronic mastitis. He saw several surgeons, the consensus of opinion being for removal. The breast was

amputated. The microscopical section was pronounced to be a fibro-adenoma undergoing myxomatous changes in parts. He was quite well nine years later.

Carcinoma appears to follow in the footsteps of almost any pre-existing mammary disease, so that it is very difficult, as I have before said, to satisfy oneself whether there is any actual stage of transition from an innocent to a malignant tumour. Though opinions on this subject are various there is enough evidence to show that benign growths do at times take on a malignant character, but this does not occur frequently enough to state that such growths are specially prone to develop into malignant disease. That they may do so should always be borne in mind. I have mentioned an interesting case when referring to chronic mastitis, and would now draw attention to two cases where scirrhous carcinoma developed in a fibro-adenoma.

Anna W., a woman aged 65, was in hospital in September, 1895. She had had a small tumour in the right breast for twenty-five years, but lately it had increased in size. The tumour was hard, irregularly lobulated, and freely movable, it having all the characteristics of a fibro-adenoma, the only unusual point being that the skin over it was slightly adherent. The tumour was enucleated and the overlying portion of skin freely removed. The microscope showed the tumour to be a scirrhous carcinoma. Most unfortunately, I have been unable to trace the subsequent history of the patient.

A somewhat similar case was seen in 1896.

Caroline P., aged 43, was in hospital in October, 1896, for a painless, slowly-growing tumour of thirteen months' duration. At the upper and extreme outer border of right breast there was a hard, lobulated, freely-movable tumour. The skin was not adherent, and the rest of the breast was healthy. There were no enlarged glands in axilla. A diagnosis of fibro-adenoma was made and the tumour enucleated. The Clinical Research Association reported the tumour to be a scirrhous carcinoma with a large amount of stroma. She was seen in February, 1901, when she had a sound healthy scar and breast.

CYSTIC DISEASE.—The next group of cases to which I wish to draw attention is that of cystic disease and cysts, arising independently of any neoplasm. I have notes of

twenty-five cases. Single cysts are said to be very rare, yet eleven of the cases under observation were found to have a solitary cyst, but in some of them there were found as well intracystic growths. Single cysts are of peculiar interest because they so often lead to an error of diagnosis; a deeply-seated tense cyst bears a great resemblance to a carcinoma. They scarcely ever, however, cause any dimpling of the skin. In two cases of single cysts the breast was amputated under the impression that a carcinoma had to be dealt with. To aid in making a diagnosis I have no hesitation in exploring with a sterile hypodermic syringe. If fluid is withdrawn the diagnosis is assured, and in some cases the emptying of a cyst seems to effect a cure.

Mary Ann B., aged 46, was admitted into Quin Ward, July 30, 1888. She was married, and at the birth of her only child, nine years ago, had a good deal of trouble with her breasts. Five weeks before admission she noticed a small lump in the left breast, which had not increased in size or given pain. In the left breast, just above the inner side of the nipple, was a small hard tumour about the size of a hen's egg. It was not tender. It was slightly lobulated, and in the breast tissue itself. The skin was freely movable over it, and there was no retraction of the nipple. As some doubt was raised as to an exact diagnosis, an exploratory incision was instituted next day, and a dense, white, hard tissue being cut into, the growth was thought to be scirrhous, and the breast was therefore amputated. No enlarged glands were found. On examining the breast after removal, it was found that the dense tissue was really the immensely thickened wall of a centrally situated cyst, and that there were many small cysts scattered through the breast tissue. The patient made an aseptic recovery, and was discharged August 14 well. The microscopic section showed cystic disease of breast.

Elizabeth T., aged 42, was admitted into Ebury on June 10, 1892. In the preceding February she had accidentally discovered a small lump in her breast, which increased in size in spite of medicine and ointment. In the upper and outer segment of the breast there was a fairly smooth tumour about the size of an egg; it was situated in the breast tissue itself; the skin was not involved, and there were no enlarged axillary glands. An exploring needle was used and it seemed to enter a very hard nodule; no fluid was withdrawn. A diagnosis of carcinoma was

made, and breast amputated on June 13. On dissecting it off the pectoral muscle a cyst on the under surface of the breast was opened and a considerable quantity of clear yellow fluid escaped. When examined there was found to be a large cyst with thin smooth lining membrane. Its upper wall was thick and hard, but its under surface was very thin indeed and was connected with the pectoral fascia. The wound healed under one dressing, and the patient left the hospital June 24.

The nomenclature of diseases of the breast is most puzzling, some authorities grouping cases under one head, some under another. Take for example villous papilloma; some would put these in a group by themselves, others place them under cysts and cystic diseases. I have done the latter. The cysts, which may be solitary or multiple, contain a villous papilloma or an intracystic growth. An important diagnostic sign in these cases is an exudation of fluid, usually blood-stained or brownish in colour, from the nipple. This was noticed in five cases, and in each the cyst contained an intracystic growth.

It is not necessary, unless the disease be multiple, to do more than freely remove the cyst. This was done on ten occasions. It is preferable, I think, to incision and plugging the cavity, or injection of the sac. When the disease, either as small simple cysts or cysts with intracystic growth, is general, amputation of the breast becomes necessary. This was done eight times. Three of the cases will repay individual study. The first from the extreme age of the patient; she was the oldest breast case, and nearly the oldest patient, upon whom I have operated.

Eliza P., aged 84, was admitted on April 25, 1896. About forty years previously she noticed a soft lump in her right breast, about the size of a walnut. This had very slowly increased in size. There used to be a milky discharge from the nipple; this became sanguineous eight or ten years ago. Six weeks before admission the breast became red, more swollen, and tender. There was, when examined, a large swelling, occupying the whole of the right breast, freely movable over the deeper structures. The skin was red, and adherent to the tumour; in parts it was a purplish colour. The nipple was retracted. Fluctuation was evident in parts of the tumour. There were enlarged glands in

the axilla. On April 28 a rapid operation was executed; the breast, pectoral fascia, and contents of axilla being removed. Though no suppuration followed the operation the wound gaped a little, and repair was delayed. The mental condition of the patient gave some anxiety; she became restless, semi-delirious, and childish, but subsequently made a good recovery. The tumour consisted of numerous cysts filled with pendulous villous protrusions. In parts they were of a dark spongy nature; in others like bunches of small grapes. Dr. Johnstone reported the tumour to be a villous papilloma. She was known to be living two years after the operation.

Caroline B., a married woman, aged 45, was in Durning Ward January, 1898. Five years previously a swelling appeared in the left breast; fifteen months before admission it was tapped, and disappeared, but it soon filled again. There were two small fluctuating swellings in the left breast, which was not itself indurated; there was a large irregular fluctuating cyst on the right side; the whole breast seemed to be full of small cysts. On February 2 six thin-walled cysts, containing an opaque green fluid, were removed from the right breast, and two from the left. She left the hospital February 18. She was readmitted April 8, 1899, with a large tense cyst in axillary lobe of right breast and many smaller ones scattered over breast. On April 11 an incision was made over the large cyst; the breast, however, seemed so generally cystic that it was amputated. On section the whole breast was riddled with cysts, varying in size from a pea to a bantam's egg. She left the hospital April 28. In February, 1901, she was in excellent health, with a normal scar.

Sarah W., aged 46, was in Durning Ward, November, 1900. For ten years she had had a watery discharge from the left nipple, but she had only noticed the tumour a few years. Two years previous to admission a sore formed, which had never healed. There was an ulcerated tumour on the outer side of and involving nipple; it was movable over chest wall. It projected above the skin, and in parts had a rolled-over edge. Most of the surface was depressed, with healthy granulations; from the bottom of a depression clear fluid exuded. The breast was removed, together with contents of axilla. The growth was seen to consist mainly of a large cyst; the cyst wall was thin, and the cavity was packed with a soft papillomatous intracystic growth. There was no infiltration of cyst wall or tissue around. The tumour was accidentally thrown away before a microscopic section was made. She left the hospital December 7.

In one case a solitary thin-walled cyst appeared first in one breast, and was removed; a second appeared later in the other breast, and was also removed.

Ann K., aged 52, was seen in May, 1897, for a tumour of the breast of three months' duration. In the upper and outer lobe of the left breast was a soft fluctuating swelling, size of a bantam's egg. A large thin-walled cyst was removed; there was no intracystic growth. The microscope showed no malignancy. In October, 1898, a very thick-walled cyst was removed from the right breast. The microscope showed the cyst to be due to dilatation of ducts, and there was no malignancy. Patient keeps well in February, 1901.

It is refreshing to turn from the purely surgical treatment of these diseases to the medical. My next three cases illustrate the effect of medicinal treatment of cysts. Some of the cases operated on had been submitted to medical treatment, but with no such conspicuous success.

Mrs. K., aged 50, was seen April, 1898, having accidentally discovered a tumour in her right breast three weeks previously. In the centre of the breast was a soft fluctuating swelling about the size of a bantam's egg; no general induration of breast; no enlarged axillary glands. A diagnosis of cyst was made, and she was treated by Dr. Pullar, who reported that the tumour entirely disappeared after taking *phytolacca* 1x.

Mrs. S., aged 64, was sent by Dr. Andrew Neatby, December, 1898, for a tumour of the left breast, noticed only a few weeks. In the centre of the upper part of left breast, deeply situated, there was a tense cyst. The hypodermic needle drew off brown turbid fluid. She was put upon silica, and Dr. Neatby reported later that, after taking it some time, the tumour completely disappeared, and there has been no return to date—February, 1901.

Mrs. F., aged 48, seen November, 1899. Twelve years before she had cystic disease of the left breast, and saw Dr. Dyce Brown, Sir James Paget, and Mr. Nunn. She was treated by the former for twelve months, and got quite well. Six weeks ago she discovered a tumour in her right breast; she had been taking *ars. iod.* and *hydrastis*. The tumour was increasing. In upper portion of right breast was a tense globular swelling (fluctuating), size of pigeon's egg; rest of the breast healthy; a few minute

cysts were forming at upper and outer edge ; she was submitted to treatment, and in February, 1901, patient's husband reported there was no tumour present.

Before leaving the subject of cysts I might refer to galactoceles—cysts containing degenerated milk products ; they originate during pregnancy or lactation. Reference has already been made to one case associated with a fibro-adenoma. The following case exemplifies most of the points in a case of galactocoele :—

Mary E., aged 38, was admitted into Durning August 2, 1890. She was a multipara, her last confinement having taken place nine months previously. She had nursed her baby for five or six months, but not from the left breast as the milk did not seem to flow easily, when she noticed a small swelling on that side breast. She came to the hospital and an exploring needle was inserted and a milky fluid was withdrawn. When admitted there was in the upper and outer quadrant of the left breast a swelling the size of a hen's egg. It was freely movable on the subjacent tissue, but the skin over it was adherent, and at one spot it was red and angry looking. The tumour was circumscribed and well defined and fluctuated. Milk could be made to exude from the nipple. There was no pain, and no enlarged glands in axilla. The swelling had rapidly increased in size. Under chloroform the tumour was incised, and a small quantity of bloody serum escaped. In the tumour was found a quantity of whitish caseous material which was removed with Volkmann's spoon. The cyst was rubbed with iodoform and a drainage tube inserted. Patient left the hospital well, August 14.

PAGET'S DISEASE.—I have only one case of Paget's disease of the nipple to record. The more modern term, and one perhaps better describing it, is "Dermatitis Maligna." It appears at first as a chronic eczema of the nipple, but ends as a cutaneous carcinoma, but the nipple is not always destroyed as in this case.

Martha P., aged 64, in Durning February 19, 1898. She was a widow. Two years previously she had noticed a small excoriation about the left nipple which had gradually spread until it had reached its present condition. At the side of the left nipple there was an oval patch of superficial ulceration about the

size of a four-shilling piece ; it was of a florid red colour, raw and excoriated ; the edges, which were defined, were slightly raised and indurated, but not so all round the area ; the surface secreted a viscid purulent fluid ; the breast beneath seemed free from all induration. There were enlarged axillary glands. On February 22 the affected area was widely and deeply removed, as well as the enlarged axillary glands. She made a rapid recovery and left the hospital March 16. The Clinical Research Association reported "the axillary gland is infiltrated with scirrhus carcinoma. The section of the nipple shows the changes due to Paget's disease. There is much inflammation of the corium and down-growths of epithelium are seen in the subcutaneous tissue." When she left there was no induration in either the breast or axilla. She died twelve months after the operation. There does not appear to have been any local recurrence, but she sank after an illness with abdominal pain, sickness and diarrhœa. In this case, although the axillary glands showed carcinomatous infiltration, the mammary gland itself does not seem to have been affected. In "Paget's disease" we have a problem to solve: is the disease malignant from the beginning, or is there a transition from the benign to the malignant? Many cases have been recorded where local treatment directed to the eczematous condition has eventuated in a cure, but when the case resists treatment then operative interference is necessary. On another occasion I should remove the breast as well as the affected nipple area, as being a safer proceeding than local removal.

SARCOMA.—Midway between the adenomata and the carcinomata histologically appear the sarcomata, and much confusion exists in discriminating between them when elements common to both are met with in the same tumour. I have only seen three cases of what I have considered to be pure sarcoma. The cases are not common, so I give them in full.

Amy B., aged 40, was admitted into Ebury Ward March 20, 1889. She gave birth to one child fifteen years ago. Six months previous to admission patient noticed a small white lump on the inner side of the right nipple which gradually increased in size, and about January it began to get red and painful, and lately the whole breast had become much harder. When admitted the right breast was large, hard and full, the skin being red, brawny and glossy. The whole breast seemed involved in the growth,

and it was partially adherent to the pectoral muscle. The outline of the breast was quite regular with the exception of a movable nodule on the outer side. At the inner side of the nipple there was doubtful fluctuation. There was pulsation in the breast, which, although occurring to a certain extent in the tissues around was due to the vascularity of the growth. There were some enlarged glands high up in the axilla. She was given phosphorus 3x in alternation with belladonna ϕ , and a small exploratory incision made, but the case not appearing suitable for operation and not improving under treatment she was discharged May 1, 1889.

Mary W., aged 22, was admitted into Ebury June 19, 1891, for a tumour of the left breast of thirteen months' duration. It began as a small hard lump, accompanied with some pain. It grew slowly at first, but for the past two months it had increased very rapidly and become much more painful. She was a well-nourished, healthy-looking girl. The left breast was much enlarged, the enlargement being most marked outside the nipple. The skin over the tumour was shiny and darker than normal and slightly cedematous; the veins were well marked. The nipple was retracted. The breast felt heavy and solid; the skin over the surface was fairly freely movable, the whole mass moved perfectly freely over the pectoral muscle. The mass, which was chiefly outside the nipple, was rounded and somewhat lobulated, and was of an elastic character. The axillary glands were enlarged. She was ordered phytolacca and watched. There was no rise of temperature. On June 30 an exploring needle was used, but nothing but thin blood was removed. On July 8 the breast was removed. The tumour was of a yellowish-white colour, rather tough and of uniform consistence; it contained no cysts. No microscopic result is attached to the report. The patient left the hospital well on July 27.

Susan O., aged 55, was admitted into Ebury September 6, 1890, for a tumour of the left breast of two and a half years duration, which gradually increased until in May, 1890, it broke through the skin and fungated. There was no family history bearing on the case. When admitted there was a large fungating swelling involving the greater part of the left breast, which was freely movable over the adjacent parts; the mass bled easily and had sloughs in parts, and there was much foul-smelling discharge. The skin around was red and cedematous. There were enlarged glands in axilla, one being of considerable size. On September 9 the breast and contents of axilla were removed,

some of the wound being left to granulate. The operation was followed by some suppuration. She was discharged with the wound all but healed on October 21. On December 15 she was re-admitted with some recurrence in the axilla, which was removed, and she left January 5. A microscopical diagnosis of round-celled sarcoma was made.

CARCINOMA.—Eighty-seven, or more than half the number of cases under revision, were found to be suffering from carcinoma in one or other of its forms. Consideration of carcinoma mammæ in its entirety would occupy so much time that I shall confine myself to a few points only. The greatest number, as might have been expected, occurred between the ages of 40 and 60. The following table gives the number at the various decades:—

Between 20 and 30	...	...	3 cases.
„ 30 „ 40	...	...	9 „
„ 40 „ 50	...	...	27 „
„ 50 „ 60	...	...	27 „
„ 60 „ 70	...	...	18 „
„ 70 „ 80	...	...	4 „

The youngest case seen was in a single woman, aged 27, who was admitted into Quin in 1894 for a rapidly-growing tumour of the right breast of nine months' duration. Breast and contents of axilla were removed. A microscopic diagnosis of scirrhus was made. In July, 1896, she was re-admitted with recurrence in the pectoralis major muscle, which was removed. Two years later Dr. Roche reported she died with general carcinomatous infection.

In another case a married woman, aged 29, with no children, was admitted into Durning, in 1895, for a two months' tumour of left breast. A large infiltrating tumour occupied the upper and inner segment of breast; the skin was adherent over it. The axillary glands were enlarged. The patient was subject to asthma and bronchitis. On October 8 the breast and axillary contents were removed. Her chest gave her a good deal of trouble after the operation, union being delayed by some sloughing of the edges of their tense flaps. She left the hospital November 9. The microscope showed the tumour to be a carcinoma with con-

siderable amount of fibrous tissue. Her subsequent history cannot be traced.

In January, 1897, I saw my first and only case of carcinoma of the male breast in a gentleman aged 70, who had noticed the tumour one year. The right breast was the seat of a small hard tumour; there was a depressed raw surface over it and the nipple was absent. Scattered on the skin around the breast and reaching to some distance beyond it were small raised secondary nodules. The axillary glands were enlarged. Operation was not advised, and though treated carefully with homœopathic remedies he died two years later.

Out of the eighty-seven cases of carcinoma of which I have notes, seventy-two were submitted to operation.

They may be tabulated as follows:—

Well 3 to 13 years after operation ...	13 cases.
„ under 3 „ „ „ ...	12 „
Recurrence after 3 years after operation	1 „
„ under 3 „ „ „ ...	31 „
Not traced	14 „
Died	1 „

One may reasonably ask what are the practical results of this not inconsiderable operative work. Has it prolonged life or cured the disease? Before answering this one must try to arrive at some conclusion as to what is the prognosis of carcinoma if left alone. No one can have seen much of this disease without at once realising how difficult it is to satisfactorily answer this important question. Certain cases of the atrophic form may continue for many years, but taking the general run of cases four years seems to be the average duration of life. Some put it considerably less. My own figures are too small to be of any value. I have not felt myself justified in advising patients to submit to any prolonged medicinal treatment, but rather to submit with as little delay as possible to operative interference. I have notes of two patients whom I saw with early carcinoma and for whom I advised operation, which was declined. They both subsequently received continuous homœopathic treat-

ment under the advice of good men, but when seen at the end of a year the disease had made such serious advance that a fatal termination could not be far off and operation was entirely out of the question. However, side by side with these I should place the following :—

In 1896 Margaret L., aged 52, was admitted into Durning for a tumour of the left breast of ten months' duration. The growth appeared to be a typical carcinoma, but beyond the area of the breast were some small secondary nodules in the skin, and the axillary glands were enlarged. One of the skin nodules was removed and examined microscopically and found to be a carcinoma. The case therefore was considered to be too extensive and far-reaching for any operative interference. Dr. Epps reported that five years later the patient was living and that the local condition had changed very little.

I have been able to trace the subsequent history of fifty-seven patients operated on for carcinoma. Of these thirteen were well and free from any sign of disease at periods varying from three to thirteen years after the operation, or nearly 25 per cent. of the known cases. It is not so many years ago that most pessimistic views were held by the most experienced surgeons as to the value of the removal of the breast for cancer; fortunately, with the revival of earlier and more complete operations, the chances of a permanent cure are rising. In all cases but three I can adduce positive evidence as to the correctness of the diagnosis, and in these the result of the microscopic examination has been mislaid. Out of the seventy-two operations the microscopical diagnosis is entered in the notes in forty-seven cases, but it does not follow that no microscopic examination was made in the remaining twenty-five. Resident medical officers, I find, are not always as careful as they might be in entering such details, which are usually supplied when the case is convalescent and in some cases after the patient has left the hospital. I have fortunately been able, by careful search, to supply the deficiency in several cases. In seven cases, where no entry of the microscopic examination had been made, subsequent recurrence verified the clinical diagnosis.

1 case was well 13 years after operation.

1	„	„	12	„	„	„
2	cases	were	well	7	„	„
3	„	„	5	„	„	„
2 ¹	„	„	4	„	„	„
4	„	„	3	„	„	„

13 cases.

3 cases were well 2½ years after operation.

4	„	„	2	„	„	„
5	„	„	under 2	„	„	„

12 cases.

Among the cases of patients living and free from disease over three years after the operation are some that have been submitted to second operations, and are worthy of brief mention.

In March, 1889, I removed the breast of Mrs. S., aged 50, for a small scirrhus tumour of the right breast; no note appears to have been made of a microscopical diagnosis; but in 1896, seven years afterwards, she consulted me on account of a large hard gland in the right axilla, evidently malignant. This together with the axillary contents were at once removed, and she remains well to date. Microscopically the gland was found to have undergone extreme fibrosis, but at one part there was a zone of typical scirrhus carcinoma.

The following cases also had a recurrence successfully removed:—

Louisa P., aged 50, had her right breast amputated in June, 1894, for a tumour of four months' duration. A microscopic diagnosis does not appear to have been made. In May, 1897, two nodules in the scar and glands in the axilla were removed, which the microscope showed to be scirrhus carcinoma in the subcutaneous tissue spreading forward towards the corium, the skin not being actually invaded. In February, 1901, the patient was quite well and free from recurrence.

¹ One of these died of bronchitis without any recurrence.

Mary Ann A., aged 56, in November, 1897, had her left breast, costo-sternal portion of pectoralis major muscle and axillary contents removed for a tumour of six months' duration. Macroscopically the tumour was a typical scirrhus, but no record has been kept of the microscopic appearance. In five months a small recurrent nodule appeared in the axilla: this was removed. In February, 1901, the patient was perfectly well.

The following is the interesting case of recurrence in the opposite breast :—

In 1894 I removed the right breast of a woman, aged 43, for a slowly-growing tumour of twelve months' duration with enlarged glands. A year later a similar tumour appeared in the opposite breast, but she declined operation and placed herself under the Mattei treatment. The disease slowly extended, and she died in four years (1899) with a large fungating tumour. But the side operated on was, up till her death, quite free from any recurrence.

The following is an interesting case showing the importance of a microscopical examination of a supposed recurrence :—

In 1896 I removed the right breast of a woman, aged 53, for a typical scirrhous carcinoma, confirmed by the microscope. Two and a half years later she was re-admitted with a small hard nodule at the axilla. This was removed and reported to be a simple epithelial implantation cyst which had developed in the scar of the old incision; there was no malignant growth.

Secondary or metastatic disease was observed in nine cases without any local recurrence; in five it was the spine, causing in some cases paraplegia, in others severe intercostal pain; once the disease appeared in the brain, once in the lungs and pleura and once in the liver. In all but one of these nine cases death has already taken place—within a year of the operation in three cases, within two years in four cases, and within three years once. One case is dying of ascites due to secondary disease of the liver.

Local recurrence was found in twenty-five cases, either in or near the site of operation or in the supraclavicular glands. Four of these cases terminated fatally in a year,

six within two years, and two within four years. Taking all the known cases of metastatic disease and local recurrences, thirteen were recorded within the first year following the operation, fourteen within the second year, five within three years and two after three years. A good many cases of local recurrence were submitted to secondary operations and three of these seemed to have been permanently cured, as the patients are alive and well, seven, six and four years respectively after the secondary operations. These figures show that if the disease is going to recur it will usually do so within the three years' limit which has been empirically set as the point of cure, though that this cannot be accepted as accurate some of my cases show. Still every patient that is alive and free from disease three years after the operation has an exceedingly good chance of being free from future recurrence.

All cases of re-appearance of the disease either local or general.

13 cases appeared within 1 year.

15	„	„	„	2	„
5	„	„	„	3	„
1	„	„	„	4	„
1	„	„	„	7	„

Fortunately one can speak with some confidence as to the mortality of the operation. The breast has been amputated eighty-four times, seventy times for carcinoma, twice for sarcoma, eight times for cystic disease, twice for cystic fibro-adenoma, and once for mastitis and once for tubercle. In nearly every case undertaken for malignant disease the axillary contents and pectoral fascia were removed with the breast, and for some years past the costo-sternal portion of the pectoralis major muscle has been removed as well. Of these eighty-four patients only one died, and that curiously enough the last of the series, from an inexplicable pyæmia. None of the patients were ever seriously ill and the majority of them healed under one dressing. Convalescence in some cases was delayed owing to the impossibility of bringing the edges of the skin together, and so repair had to take place by granulation. In

suggesting operation we can eliminate any serious danger from it *per se*, however extensive it may be. The most serious element in it is the nature of the disease for which it is undertaken.

An Analysis of 153 Consecutive Cases of Diseases of the Breast.

Carcinoma... ..	87
Cysts and cystic disease... ..	26
Fibro-adenoma	13
Mammary abscess	13
Hypertrophy	4
Sarcoma	3
Tubercle	3
Chronic mastitis	3
Paget's disease (dermatitis maligna) ...	1

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Dr. GOLDSBROUGH, after thanking Mr. Shaw for his very elaborate paper, mentioned the case of tuberculosis of the breast to which he had referred. This case, whom he (Dr. Goldsbrough) had sent to the hospital, would be brought before Mr. Shaw again in a few weeks' time with a recurrence in the other breast.

Dr. McLACHLAN said he was one of those unfortunate individuals who had no personal knowledge of a single cure of cancer either by medicine or the knife, although there could be no doubt that such cases occurred, as instanced in the present number of the *Monthly Homœopathic Review* (April). The *New York Tribune*, in 1884, also recorded a very important case where the cancer had actually perforated the pleural cavity, therefore far beyond any chance of cure by operation, and yet that case was cured apparently by the internal use of the extract of red clover. Many people in Oxford had a great faith in that particular drug for cancer; an infusion was made from the dry heads of the clover and drunk by the patients. Professor Thomson, the then President of the Royal College of Surgeons, Ireland, recorded a case, some years ago, apparently of sarcoma of the upper jaw. He could do nothing

for it in the way of operation, and simply sent the man home to die. The man was told to dig up some comfrey root, pound it down to a pulp and apply it as a poultice. He did so, with the result that he was perfectly cured. Thomson made the remark that it was one of the most puzzling cases he had ever seen. Mr. Shaw had stated that there was a reasonable prospect of cure by operation, but he (Dr. McLachlan) was still inclined to take the rather pessimistic view, more common twenty years ago, that operation never cured cancer, and the cases it did "cure" were not cancer at the beginning. In one case of supposed cancer he (Dr. McLachlan) applied the test which Mr. Shaw might have laid more stress upon, known in Edinburgh as "Spencer's test." Standing behind the patient the doctor places his flat hand upon the breast and flattens it out against the chest wall. Anything in the way of lobular induration disappeared, but a tumour would stand out distinctly. In his patient he found two lumps close together and about the same size. It was inconceivable that cancer could begin in two spots at once, and the case eventually turned out to be one of deep-seated abscess, which entirely recovered. He did not lay too much stress upon the microscope, apart from clinical history. In regard to Paget's disease, he had always understood that there was a stage between the simple and malignant form. He had a case at present of a woman, at the change of life, who was troubled at intervals with bleeding from the nipple of one side. He would be glad to know Mr. Shaw's opinion as to the probable nature of the lesion and how he should treat it.

Mr. WYNNE THOMAS did not agree with Dr. McLachlan that cases of cancer could not be cured. His father, many years ago, removed the breast of a patient for what he considered to be carcinoma. It returned five times in the scar, but as soon as the nodule grew it was excised, and after the fifth time there was no recurrence. He saw the patient ten years after the last operation and she was quite well. In a case where the medical attendant thought there was carcinoma of the breast, and on incising the swelling before amputation he found there was a cancerous tumour and then proceeded to entirely remove the breast, was it possible that having incised the cancerous growth beforehand, the juice or cells from the growth could be introduced into the sound tissue and start a cancerous growth there afterwards? The case mentioned by Mr. Shaw, which was under the care of Dr. Neatby, was

aspirated and then treated with silica. In his opinion the aspirating was the remedial measure in the case.

Mr. JAMES JOHNSTONE said incision of the tumour before operation had much to recommend it, but it also had its disadvantages. The opening of a septic tumour or cavity might infect the wound of operation and so increase the risk of mortality and prejudice the convalescence. There was every possibility that cancer was transmissible and had been implanted, and therefore the cancer juice running over the tissues might be a source of secondary infection. With regard to the use of the microscope in diagnosis, he did not think it would err where there was actual carcinoma, and the tumour had been thoroughly well explored by sections in several places. But there were cases where no amount of microscopic investigation would reveal carcinoma present in an inceptive stage; the tissues would not have that malignant appearance always looked for, and yet at the same time possess malignancy. He thought Mr. Shaw was to be congratulated upon his results, viz., that 25 per cent., or one in four of the cases, had remained free from the disease three years or more after operation. A few years ago, he (Mr. Johnstone) read a paper on the subject, and the statistics at that time were that one in five stood a chance of being cured or surviving the three years' limit. Perhaps in another ten years Mr. Shaw will be able to report a mortality of only one in three.

Dr. JAMES JONES described a case which showed the difficulty sometimes of diagnosis. A patient had been to the Berkshire Hospital and was told she had a malignant tumour, for which amputation of the breast was advised. The patient, however, was most averse to operation. On making an examination he found the tumour was a very large one, the whole breast being involved, and apparently was adherent to the pectoral muscle, but instead of being cancer it turned out to be an abscess, from which the patient entirely recovered. In his opinion it would be well sometimes to make an incision into the breast before amputation. He knew of a patient who lived twelve or thirteen years from the time carcinoma of the breast was first discovered. She was treated with various homœopathic remedies. The whole side became almost like a half breast-plate, the breast being quite atrophied. The patient died eventually from an attack of diarrhoea. He asked Mr. Shaw whether he had had a case where scirrhus had been in the breast, and another kind of cancer had developed subsequently.

He (Dr. Jones) remembered one instance where scirrhus appeared in the breast which was removed, and epithelioma subsequently developed in the uterus.

Mr. DUDLEY WRIGHT (in the Chair) thought that one conclusion drawn from the paper was that very little reliance could be placed upon microscopical examination—not that microscopical examination was useless, but that clinical evidence was safer. With regard to the case of hypertrophy of the left breast, it was interesting to find that it was connected with lymphatic obstructions similar to cystic hygromata found in children, and also that it disappeared largely of its own accord, which cystic hygromata had a happy knack of doing before adult age was reached. In regard to tubercle of the breast and gumma, which latter Mr. Shaw did not include in his cases, he (Mr. Wright) had one very marked case of gumma, the breast being riddled in all directions, and he found that removal was by far the best plan in these cases. The same also in tubercle; and in the latter the risk of generalised tuberculous trouble was thereby avoided. A large number of cases of tumour of the breast had been cured with phytolacca and similar remedies, and these cases could not be dismissed as mere coincidences. It was difficult to say how the remedies acted. He believed that the nervous system generally affected both the stimulation and the inhibition of the growth of cells of the body, especially in malignant disease. It was quite possible that some of the remedies which cured cancer did so by acting upon the nervous system. He was much interested with the comfrey case. He had tried the drug in sarcoma of the maxilla, but without any effect.

Mr. KNOX SHAW, in reply, said he had been obliged in writing his paper, owing to the extent of the subject, to leave much to inference, and had omitted a great deal he would like to have said. He did not draw particular attention to the question of clinical diagnosis *versus* microscopical diagnosis, hoping the members would see they did not always correspond. He could not quite agree with Mr. Johnstone. He used to think that a risk was run of infecting patients if a carcinoma was incised. Seeing that all the efforts to make cancer grow had failed, he felt the risks run in making the incision were very small compared with the gain obtained in the knowledge of the case. He was quite sure Dr. McLachlan would find that his patient who had bleeding of the nipple had a small cyst.

SOME PERSONAL EXPERIENCES OF THE ACTION OF REMEDIES WITH REFERENCE TO PRESENT-DAY TENDENCIES.¹

BY WILLIAM BRYCE, M.D. EDIN.

MR. PRESIDENT,—It is common knowledge that the feature which marks out the last seventy years as a phenomenal period in history is the development of human intellect, especially in the inventive faculties. It has, however, brought with it such a feeling of self-satisfaction and despising of old ways and things, as to create a state of restlessness and desire for change, not only in things generally, but in thought, so that thought itself cannot be content to remain long on the same plane. From what we see around us now it is difficult for us to realise the primitive state of the earliest years of last century, as we have heard of it from old people—primitive in its calm restfulness, in contentment with simple surroundings, uneventful life, and old-world ways.

Medicine in the nineteenth century is a good example of the spirit of the age, which shows itself first of all in the pride of reason. During the whole of the century just ended, the medical mind has had before it a method of saving human life which has been established by an immense accumulation and sifting of facts, but the ultimate ground and reason of which science has not yet been able to explain. Because their reason has not been able to penetrate its secret it must be error, and hence the majority condemn it, repudiate it, and are ever exercising their highly-evolved intellects to invent something better that will relegate to oblivion the hated faith. Medicine has incurred a serious responsibility for 100 years past, in what we note as a curious coincidence, that, during the murderous reign of the lancet, men had before them a simple method by which the vital fluid was preserved, disease at the same time checked

¹ Presented to the Section of General Medicine and Pathology, May 2, 1901.

and life saved ; but choosing the bane and refusing the antidote, death has reigned unnecessarily. It is seen also in the revolutions of practice—the cyclical movement which is ever bringing us back to the same point in the medical orbit. A belief that plants possessed miraculous virtues goes back to primeval times, and the origin of that belief is obvious. We have also evidence, from the olden time, not only that there existed great faith in their curative actions, but that all remedies were obtained from the vegetable kingdom from the time the healing art began. I have beside me two old books which tell us that belief in those miraculous virtues was still firm 200 years ago, and, as to their curative effects, faith still exists as strong, as ever, because the remedies obtained from that kingdom are now, and ever must be, the mainstay in medicine.

In "The New London Dispensatory, of 1691, translated from the Latin by William Salmon, Professor of Physick at the blue Balcony the Ditch-side nigh Houlborn Bridge," we have a mixed treatment fully detailed, the main part of which was clearly a survival of the ancient faith ; for the remedies are taken from every member of the vegetable kingdom, from the oak to the moss, though their methods of preparation did not, we shall see, reach country districts, as the people in these retained the older—of infusion and decoction. In these districts, but more specially in remote and primitive places, the treatment was very much domestic as recently as the beginning of last century, and partly due to the fact that, though doctors are now in every hamlet, seventy years ago there were very few, and at long distances from each other. But besides that, no district of country was then without men and women specially skilled in the use of herbs—not professional herbalists, but just country people, who inherited the knowledge, handed down from one generation to another. That knowledge had a peculiarity in this: that country people knew what herb to prepare by infusion and what by decoction. Seventy, and even down to fifty, years ago, infusions and decoctions were a good deal used by doctors. I have had an experience with them I have never been

quite able to thoroughly understand, but it bears out the knowledge of those old people referred to. I have very often had this experience: that a disease that would not yield to the remedy in any other form, at once did so to the same remedy in infusion or decoction.

I have had awkward experiences, also, of these infusions and decoctions when practising in the country—and many of them—but I give only two examples. A chronic and severe cystitis, for which I had failed to find the homœopathic remedy, after careful study of Jahr, the only book then, and a fair trial as to time, was found for me by a country carpenter, who quickly and permanently cured my patient by a decoction of *Triticum repens*—the farmer's pest. Not long after I found it recommended in an old medical book for that disease, and it must have been the homœopathic remedy, cure followed so soon. In another case, the only other I shall mention, one of post-scarlatinal dropsy, an infusion of parsley soon cured, after I had signally failed; and it was the only failure I ever had under homœopathy. Sequelæ do not now occur as a rule.

When the simple *specific* treatment of antiquity was invaded by the progress of civilisation—if I may be pardoned for speaking ironically, when the ascending arc of a new cycle first began to show itself, we do not know, but we have the fact that in 1691 these two old books reveal it in full force.

The part of the treatment so strongly enforced from the "Ditch-side nigh Houlborn Bridge" must have come in as a pure innovation, because the Christian conscience of early men—say 3,000 years ago—would not have suffered for one moment some things pertaining to it, on account of their strict views as to the sacredness of the human body and of the blood of any animal. In this sacrilegious innovation we find that there is not a tissue nor a secretion of man, woman, beast, bird, or reptile that does not flourish as an almost infallible remedy, from the brain tissue of a perfectly healthy young man instantaneously killed, digested, then distilled, and prescribed as "A Noble Antepileptrick," down to secretions we do not mention. From what I heard lately I

gather that moderns pride themselves on sero-therapy and the use of tissues as a new discovery, but there we have it in full force for all sorts of diseases. Besides, they added to them the ancient belief in the miraculous virtues of plants such as ascribed to mandrake—a belief very pronounced not only at the “Blue Balcony,” but also in Scotland at the same time, as my other old book tells. It existed within my own recollection.

The Fellows of the London College retained also the old notion of the power exercised by planetary influences over human affairs, for they direct the “Secundina calcined and given in Celandine water, every day half an ounce while the Moon decreases in light (and if possible in motion too), as it wonderfully cures strumas and falling sickness, and causes the dead child to come away, as also Mola.” Moncrieff, author of the other old book, directs it to be dried and powdered and given in dram doses for barrenness. We understand that the modern revivers of this old treatment are not having much success with some of their tissues. May it not be that they have neglected to administer the tissue at the right time as advised by that sapient body the London College. Before giving up faith in the efficacy of a tissue it ought certainly to be ordered to be taken “when the moon is decreasing in light (and if possible in motion too).” Whatever they may do in the way of taking advantage of lunar influences, we hope they will stop short where they are and not go the length of “The College” in preparing human tissues and serums, but the likelihood is that the fad will have died a natural death before there is time for such an advance as that, and then what next?

This sero-therapy and animal-tissue treatment was succeeded by the heroic cycle of the lancet, the leech, the blister and the calomel dosing, but when we have not enquired, as we are dealing with personal experience only.

In 1842, when I began the study of medicine, the mercurial treatment was in full swing—purgation by calomel was the usual treatment of all fevers, though that was too mild a measure for local inflammatory affections. Salivation was the thing for them after nearly all the blood had been

drawn off by the lancet, a common practice being to get the patient out of bed, set him on a chair and bleed him till he fell on the floor. An attempt was then made to get him quickly under the influence of mercury, but that as a rule failed, because the patient was generally beyond the reach of drugs before that could be effected. As time went on, as opportunities for observation increased and experience ripened, we saw that the result of the calomel treatment of those days was the establishment of a cachexy the development of which was gradual and slow but steady. In tracing it we trench not on what Dr. Hughes has done amply and so well, and give only a few notes of the sequence of events, such as ensued when it was prescribed for ordinary ailments, and for the liver especially. We note the sequence because few now alive can have had an opportunity of observing it, and it is necessary for the sequel. The sequence was briefly this: After a short period of treatment the patient felt as if much benefited; by-and-bye his feelings of illness returned and more calomel was ordered. So the treatment went, for with every renewal of the symptoms there was a return to what had seemed to do so much good before, but the doctor was deceived. After a time, however, the intervals of a feeling of health became shorter and shorter till at last the treatment not only failed to bring any improvement but distinctly aggravated. The liver was now permanently damaged. My experience agrees with the view given by Dr. Hughes that mercury, especially calomel, congests the liver, much in the same way as two others do. Every function, or organ, if that word is preferred, of the physical life is a unit. The compound unit, which is the sum total of all these, is animal life. The liver has so many correlative relations that its damaged state gradually threw so many other organs out of gear that one function after another had its special vital activities interfered with till at last, outpost after outpost occupied, rampart after rampart stormed, the enemy gained possession of the citadel—the final compound unit. Thus the equilibrium of normal life was upset and a cachexy established which cannot be entirely removed. The tracing we have given shows us how that is,

and that tracing is given not only from observations made from a medical standpoint but from connecting these with the personal experiences of childhood and boyhood, of the calomel powder for every little ailment, and of the cases met with in practice thirty or forty years ago of the cachexy in its chronic state, in which so small a dose as half a grain of *mercurius vivus* 1 taken for some days caused, in the opinion of Professor Henderson, the physiological effects of the drug in one patient, in whom, some years subsequently, a few days of *solubilis* 6 in five grain doses brought back the effects as recognised by the Professor.

Though the fact of this cachexy is generally recognised and its gradual development easily enough accounted for, it is not so easy a matter to describe the feelings of its subjects, who have tried to relate their history. At first the loss of appetite, the disordered taste, ever-coated tongue, aggravated by every fresh dose, then the listless, apathetic state, so difficult to shake off, the depression of spirits, dislike to exertion, then the characteristic craving for food—a craving that must be gratified—and finally, after the citadel had been occupied, the blunted mental faculties which, partaking in the almost invincible physical inertia, rendered brain work a burden and interfered with continuous, concentrated, intellectual effort. When the evils of dosing with crude calomel were found out the pendulum swung to the extreme limit of the opposite arc, and then arose a cry for a do-nothing system under the name of the “Expectant Treatment,” which was said to be just what Homœopathy was. But as the pendulum must swing, it was soon found back again to where it had just left, and there started a new idea about as heroic as the lancet—plunging the poor fevered body into the coldest water, and all the time the palpable results of homœopathy calmly ignored by all cycle makers, for reason despised it. Then followed as extraordinary an idea as the others—massage—infesting with us in the north the profession, nurses, and the public as a widespread epidemic. Long before this last, however, in the early fifties, we had a short run of the pure “Stimulant Treatment” by large quantities of brandy.

Homœopathy is not perfected for every abnormal state of health met with, as there are cases occurring for which no remedy has yet been found, and there are others for which we fear it will be impossible to find one. I think I am correct in saying that almost all homœopaths claim the right to deviate in certain instances, and we suppose will always claim to do so, but as the necessity is not of such common occurrence, and *never* does in acute disease, the claim need not be set down as a condemnation of the system. We each of us claim perfect liberty as to the strength of the dose, which to procure harmony for curative action compels us to go up and down the scale of dilutions according to the nature of the drug. Not only so, but in the nature of the case we may, and indeed must, use the mother tincture, in the case of one or two medicines, in certain states, but not in all. We may require to give it for one condition, but a dilution for another to bring out the homœopathic methods in their beautiful adjustments. By the nature of the drug we mean its *dunamis*, which means literally its innate inherent power—a power which is part of its constitution. This *dunamis* varies in a most unaccountable way in nearly every drug. Some substances have no physiological *dunamis* in the crude state, but have the curative developed by trituration and attenuation. Calcarea, in the crude state, has no *dunamis*, and when so administered does nothing but encrust the wheels of life and lay a foundation for premature arterial change, but such a marvellous power is imparted by the time you reach the billionth attenuation, as seems to bring its curative action as near the miraculous as may be. Crude mercury again has any amount of physiological *dunamis*, but the curative power above that does not increase as it does in the case of calcarea, and *there* a mystery, of which life is full. From the vegetable kingdom we have mother tinctures whose *dunamis* is slight and others that have it in lethal power. We remark here that the pathogenetic *dunamis* of mineral substances is one thing and that of products of the vegetable kingdom is another—are different in their nature and essence. Our dosage must therefore have some relation to this *dunamis* as well as a relation

to the diseased condition. The adjustment of these relations constitutes the art of prescribing. The discoveries of science do not tell us what life is, but they cast such a refulgent light on the relations in life-actions as enables us to see clearly that homœopathy, though in the nature of the case it is impossible for its principle to be a law in itself, is yet a corollary of the central, primal law regulating the correlative functions of all life's units and the exquisite adjustment of elemental vital activities. If we administer in the crude state a mineral substance having this physiological dunamis we are guilty of a wanton interference with those delicate adjustments in the natural operations of all life relations, animal and vegetable, as we see them correlated in primal law; and when persisted in it necessarily throws all vital activities out of gear and induces abnormal life from centre to periphery. It is different in the case of a drug which is a vegetable product. If it possesses pathogenetic dunamis it overstimulates those operations, aggravates normal vital energy and upsets the equilibrium in a different way, but from its very nature subsides in due time, leaving, however, a sensitiveness to the action of that drug which, in the future, necessitates its administration in a higher dilution if we wish for the manifestation of the curative dunamis. The evidence for this is clear in the revelations of science, but there is no room for detail. The conclusion from that evidence is that the dunamis is of the nature of vital energy, and the fact is proved that homœopathic methods, imitating the delicate operations of life, rectify its abnormal states of nutritive change somehow after the manner of that energy, but how is as great a mystery as life itself. Homœopathy as a corollary of primal law must be the rational therapeutics as well as the final, and being so it must be the best for setting life energy straight when vital activities are on the twist. Another corollary is that the dunamis of the crude state being pathogenetic must be a disturbing one, interfering with treatment immediately to follow—making for ourselves an unnecessary complication, while that of the attenuation, being in conformity with natural law and natural methods, cannot be, and besides, if

the attenuations do not possess the double relation spoken of their action is nil—the dunamis is misplaced. In the same way the compound prescription must be a disturbing element in these fine adjustments, and hence another consequence—the single medicine.

The realisation of the dunamis requires of us that we not only go up and down the scale of dilutions but that we also use the mother tincture of those remedies in which the physiological dunamis is feeble. To illustrate the varying effects produced by a drug, as the poisonous dunamis gradually draws near to the curative, we take podophyllin. When first introduced it received the name of vegetable calomel, and a very appropriate name it is, as we shall just now see. When I began its use forty-three years ago I at first gave 1x, but very soon had to go to 2x and then to 3x, but finding that even this last produced physiological effects I had to go higher. This experience induced me to give the drug a careful study. That study brought me to see its great value, and that long experience perfectly agrees with the view that Dr. Hughes has given that 3 will do all we want in the general run of practice, but there are exceptions occurring in most things. It is my favourite dilution, though I often give 6. In certain instances I give it a little lower but never so low as 3x, except in those rare cases of diarrhoea with detached mucus, in which I sometimes give a minute dose of that dilution, but for liver trouble never so low as that, with the exception of one of its damaged states not often seen. In such case I should give it for twenty-four or forty-eight hours only and then go higher. In 2x, 1x dilutions and in the mother tincture it has a powerful physiological action, damaging the liver in a marked manner, even fatally. My sole object in offering my experiences and recalling the horrors of the calomel age is to show that podophyllin possesses a pathogenetic dunamis greater than that of calomel, and not only so but that it retains it longer, for mercurius dulcis, which is a remedy of immense curative value when attenuated, I have often in 3x strength given steadily for a month without pathogenetic effect. Number 4 is an exquisite remedy.

When podophyllin is given between the mother tincture and 3x I know of no medicine whose action varies so much with constitutional peculiarities. These must be connected with the fact that livers vary as much as noses—no two being alike; many are so sensitive to the least over-stimulation, while others may be compared to low-bred horses which heed not the whip, for on whatever other part it may exert its action I think the liver comes first.

Innumerable times have I seen from 2x and 3x in amateur doctoring, its characteristic diarrhœa, already described by Dr. Hughes, in every degree, from the very slight, occurring once or twice in the morning, to a violent form, requiring, at the time, active treatment, and afterwards a more or less lengthened period of the use of remedies to antidote the over-stimulation.

I may give here a brief summary of a case I once saw, twenty years ago, in the final stage of its effects. The lady, a person I had known previously, was treated by an orthodox friend of my own. There were the usual results—over-stimulation and very free action of the bowels. Such effect on the liver is similar to that of a glass or two of wine—a feeling of renovated vigour. The sequence was the same exactly as noted in the case of calomel. On a return of the symptoms more podophyllin, but the intervals of health became shorter and shorter, the remedy failed to give any relief, and at last physical weakness ensued. Here again we have a state so similar to the gradually-produced effects of too many glasses of wine partaken of for some time with fair regularity—steady stimulation to a high pitch and then helpless intoxication with powerless limbs. My friend could not face the exertion of a single stair from the subjective sense of physical inertia. In this stage the difference between the effects of calomel and podophyllin is that from the former the inertia is not so great, and the tongue is always coated with a thick white coating, but with the latter it seems denuded of its epithelium, dry and glossy, but in other cases bright red and the papillæ enlarged, but never coated. White stools also are sometimes a secondary effect. When reduced to this state the patient's husband

asked me to give an opinion. I found no sign of any disease whatever. The pulse was scarcely perceptible. The first cardiac sound was short and not louder than the second, the two giving a tick-tick action instead of the normal rhythm. I have relieved that action, when idiopathic, with podophyllin. Reaction brought with it complete atony of the bowel. I gave the opinion there was no disease—just the effect of the drug.

Mrs. M., aged 70, had been a patient of mine for some years, during which she had no illness except now and again bronchial catarrhs, and never had a symptom pointing to any imperfection of hepatic function—in fact, she never knew she had a liver. The heart was muscularly weak, but nothing valvularly wrong. I saw her on March 5 in bed, and examined her very carefully. The heart was as stated, liver normal and of normal size. She complained that day of nothing but constipation, which being evidently from atony of the bowel, I gave her some nux 3x. Ten days afterwards called to her early and in haste; I found severe vomiting and purging going on, the vomited matter and stools containing a great many masses of mucus large enough to fill a dessertspoon. Temperature 101°, a pulse of considerable tension, heart's action strong but no bruit. Being a very thin person, the enlarged liver could be seen, and percussion revealed it extending to three inches beyond the costal border, soft, velvety, and tender to the touch. I at once suspected that some crude drug had been taken, but she and her daughter-in-law both denied any interference with the nux. At 3 p.m. she was in the same state, also at 10 p.m., and still a denial. Tuesday, 9 a.m., vomiting and purging not so very frequent, but otherwise the same. I said to her daughter-in-law, with, I suspect, more fierceness than I was aware of: "You have done something, and I must know now or never." The reply was: "My mother-in-law said that the nux was doing her no good, and she asked me to give her the drops Mrs. T. recommended, and I have given her five of them night and morning for two days"—though it may have been more, for one lie often follows another. The medicine, when the phial was produced, I found to be podophyllin, mother tincture. The cause of the illness was now clear enough. She died that night.

Mr. W., aged 63, an old patient, sent me a bottle of urine, and called two days after. I told him there was no sugar, albumin or anything in it—nothing wrong except that it had no

colour. I examined him carefully, but found nothing. On his telling me that he passed large quantities at a time, I said: "Take this glass measure with you. It is graduated up to twenty ounces. Measure the quantity every twenty-four hours for a few days, and then call." He did so, and his record showed that on some single occasions he passed as much as twelve, fourteen, and nineteen ounces at one voiding; the daily quantity ranging as high as eighty ounces, whilst in one night from 10 p.m. till 6 a.m. the following morning the large quantity of sixty ounces. Asking him if he felt ill, he said that some weeks before, feeling as if bilious, he began to take podophyllin 3x. The case was now clear. It was stupid of me not to suspect the cause, because I had met with the same effect from low dilutions hundreds of times, and at the same time observed that in such cases there was, as a rule, no action on the bowels, but that it had rather the effect of increasing the constipation. This condition I have very often met with occurring idiopathically, and have never once seen 12 fail to remove it when so. I once gave 6 for this idiopathic state, but it brought on the characteristic diarrhoea of the drug. I have seen so much of it that before deciding on the dilution to prescribe, I generally inquire whether or not this state ever occurs, or if even occasionally.

Having overstepped the limits in these notes, I cannot give any experiences in the large field of the curative action of this valuable remedy, which was the power of ameliorating certain poisoned states for which I know of no other remedy.

The restless spirit and desire for change—the spirit of the age—though marked enough among ourselves in Britain, seems stronger in other countries, in which attachment to old things and old ways is of the loosest, probably from being too hastily formed. From many with whom we have come in contact we have, for years past, noticed a trend towards a free, almost indiscriminate, use of mother tinctures, but especially of podophyllin, and, besides, combining it with mineral drugs in very low triturations, which have a physiological dynamis. Giving a mother tincture is not abandoning homœopathy, but surely combinations are equal to laying aside our rifle and reverting to the old orthodox blunderbuss with its multiple charge of slugs.

Dr. HUGHES agreed with the author's remarks in regard to podophyllin, which was one of the few medicines from which he had seen the genuine homœopathic aggravation. If podophyllin was given in anything like the third decimal dilution in cases of diarrhœa, for which it was suitable, a strong reaction would almost invariably be obtained with an aggravation of the vomiting and diarrhœa; whereas if it was given at once in the third centesimal or somewhere about that nothing but good would result. In chronic diarrhœa suitable for podophyllin he had seen the sixth dilution cure very nicely, indeed, without any aggravation. Colocynth and podophyllin were the only two medicines from which he had seen homœopathic aggravation. He had become more and more shy of using colocynth in anything lower than the third, and even there he repeated it very seldom. "Vegetable drugs in general were over-exciting in their action." Did the author intend to imply that that remark would apply to such drugs as conium and gelsemium, which seemed to depress in their primary action? That was what he objected to in Dr. Drysdale's contention that all drugs were primarily stimuli. He could not understand drugs like gelsemium and conium, which depressed and paralysed from the commencement, being called stimuli. Dr. Drysdale said they seemed to be exceptions to the rule, though perhaps this action might be accounted for by their stimulation of inhibitory nerves; but he did not think that he (Dr. Drysdale) was satisfied with that explanation. It was very difficult to lay down any general rules for drugs. They might be classified, but each drug had its individuality; and doctors should study drugs as they studied patients, by individualisation. The less they attempted to establish generalities the better.

Dr. DYCE BROWN said his experience did not exactly coincide with the author's. He had very frequently used podophyllum in the second decimal in diarrhœa and other indicated conditions, but had never once seen any aggravation from it. The drug had always disappointed him. It might be that he would have done better if he had gone higher. While acknowledging Dr. Hughes' powers and ability and careful observation in analysing the action of remedies, he could not agree with him in his theoretical explanation of the action of certain drugs, such as conium. He wished it to be distinctly understood that it was the 2x of podophyllum and not of podophyllin that he had used. Dr. Bryce's statement referred to podophyllin; this he had never employed.

Dr. BLACKLEY thought the author had rendered the Society a real service by calling attention to what must have occurred to many of the members, not only in looking at the practice of their friends the enemy but occasionally in reviewing their own practice. All doctors were human, and at times were bound to give physiological doses, particularly with the view of obviating constipation. There were conjunctions of circumstances which rendered a speedy relief to the overcharged lower bowel desirable, and he pleaded guilty to having given both tangible doses of podophyllin and also of calomel occasionally. The net result of his experience was precisely that of the author; relief was obtained in the first place, and the patient felt well, light, and springy, the appetite and the spirits were improved and all went well for a time; then the same state of affairs occurred again and the same medicine was repeated. Relief was again obtained, but the interval was shorter, and gradually became shorter and shorter, until finally the jaded steed would not respond to the spur or whip any more, and in the meantime a good deal of harm had been done to the patient. If the doctor wished to do the very best for his patient he should try something else than either podophyllin or mercury, such as belladonna, plumbum and opium, given in the third decimal or third centesimal solution, the third decimal being a very favourite one of his.

Dr. STONHAM said that Dr. Bryce had mentioned the interesting circumstance that in one case where podophyllin had caused an aggravation of symptoms, he cured the aggravation by giving a dilution as high as thirty. That seemed to him an illustration of what not infrequently occurred when an aggravation by a low dilution could be antagonised by a very high dilution. In treating a tobacco heart the first drug he gave was tabacum 30, which generally had a marked effect in stopping the symptoms. He believed the physicists were agreed that beyond the mineral, the liquid, and the gaseous there was probably a fourth state of matter, and it was not improbable that the higher dilution reached that state and acted there, not quite as identically with the lower dilution but as a simillimum, and so was curative. In dealing with vegetable drugs one was in a more difficult position than in dealing with mineral. In minerals one triturated the pure substance and knew exactly what was being dealt with, but a vegetable drug was itself a very complex body.

Mr. DUDLEY WRIGHT (in the Chair) thought surgeons had

to deal with cases of constipation upon very different lines from those of the majority of physicians. A patient was laid up in bed for a surgical operation, and in every other respect was absolutely healthy except for the condition for which the operation was requisite. The constipation was there brought about solely by the change from the upright and moving position to the lying prone. In those cases he thought it was justifiable to use some mechanically-acting drug to remedy the constipation. In the wards of the hospital it was usual to give liquorice powder or cascara. The use of an enema or massage in long-standing cases was very good. A variety of drugs could be used for the different forms of constipation, and the question was which drug should be used in a particular case. He believed the failure of treatment in a great number of cases of chronic constipation was due to the fact that the cases were not discriminated. There was no doubt that constipation could be caused by a large number of conditions in the bowel, whether there was a deficiency in fluids or a deficient action of the motor mechanism, and the doctor should aim to finding out exactly the condition within the bowel before any drug was used.

Dr. BRYCE, in reply to Dr. Dyce Brown, remarked that the effects of podophyllum, to which Dr. Brown referred, made all the difference with regard to the possibility of aggravation. In Dr. Bryce's opinion, podophyllin, to which he referred in his paper, was much superior to podophyllum. He thought the third case he had reported, in which the 3x dilution produced such an enormous flow of urine, pointed to the necessity for a very delicate adjustment of the strength of the dose. He had not intended in his paper to refer to constipation at all; he wished to bring out the relation of calomel to podophyllin, and to emphasise the fact that podophyllin produced a state of weakness which even the old calomel did not. Calomel, when used in a properly attenuated dose, was a very excellent remedy, and antidoted the action of podophyllin. In Case 2 the severe diarrhœa and its character, which made it so rapidly exhausting, the elevated temperature, the enlarged and acutely congested liver, were surely enough to account for the death of a person of 70, and to render a *post mortem* an unnecessary procedure.

SOCIETY NEWS.**OBITUARY.**

IN the sudden death, apparently from heart disease, at the comparatively early age of 60, of Dr. James Compton Burnett, the Society has lost a notable figure from amidst its membership. It is indeed a good many years since our late colleague appeared at our meetings or contributed to our proceedings; but his name has always remained on our roll, and he has kept himself *en évidence* by the little volumes he has published almost annually to interest if not to instruct us. The original, active, sanguine mind they display was well known to those who came into personal contact with him, nor can they forget the combined *bonhomie* and irascibility which characterised his temperament. His life and career have been fully related by our contemporaries, the *Monthly Homœopathic Review* and *Homœopathic World* for May. His practice, as shown by his books, was singularly eclectic. Now borrowing organ-remedies from Rade-macher, and giving them in ten-drop doses of their tinctures; now practising isopathy with 100th dilutions of "bacillinum"; now treating every chronic case with thuja where there was a suspicion of "vaccinosis," pure homœopathy assumed less and less place in his therapeutics: yet he clung to our system as his home and starting point, and was never ashamed of identification with it. *Sit levis ei terra*: we shall hold him in kindly memory.

SUMMARY OF PHARMACODYNAMICS AND THERAPEUTICS.

"GATHER UP THE FRAGMENTS, THAT NOTHING BE LOST."

MARCH—MAY, 1901.

PHARMACODYNAMICS.

Calomel.—Struck by the good effects of minute doses of calomel in cirrhosis of the liver, Dr. Jousset has experimented with it on rabbits in the laboratory of the Hôpital St. Jacques. He finds the condition of liver set up by it to be precisely that of the initial stage of cirrhosis.—*L'Art Medical*, March, p. 188.

Finding a similar condition set up in the kidneys, he has tried the drug in renal dropsy also, and relates a case in which anasarca cleared away nicely under its use, in doses of about $\frac{1}{33}$ gr.—*Ibid.*, April, p. 353.

Carduus marianus.—Dr. Bourzutscky speaks enthusiastically of the virtues of this drug in cholelithiasis, when the attacks recur frequently. He gives four drops of the tincture three times a day.—*Hahn. Monthly*, February, p. 127.

The case referred to in our eighth volume, p. 355, is given in more detail in the *North American Journal of Homœopathy* for May (p. 313). Besides the varicose veins, the hepatic symptoms indicating the drug were present.

Ceanothus.—Over and above the action of this drug on the spleen, Dr. Fahnestock writes to recommend it in the leucorrhœa of girls with anæmia and left infra-mammary pain.—*Med. Century*, March, p. 67.

A malarial spleen, tender as well as enlarged, became normal in three weeks under the action of the mother-tincture.—*Monthly Hom. Review*, April, p. 238.

Cedron.—Dr. Robert Boocock writes to praise cedron (which he seems to give pretty high) as an anti-neuralgic. The only indication he gives for it is that the extremities of the nerves are the seat of pain.—*Amer. Homœopathist*, March 1, p. 87.

Digitalis.—In using this drug for cardiac dropsy, Dr. Jousset now prefers a preparation he calls "digitaline chloroformique." Of a solution of one part in a thousand, he gives either a single dose of thirty to forty drops, allowing it to act, which it often does for seven or eight days; or he orders four drops in divided doses per diem for some time. The former plan answers best in confirmed asystolia, with much-diminished urine; the latter in less severe cases.—*L'Art Médical*, April, p. 350.

Guaræa.—Besides chemosis and lachrymation, guaræa seems to find a place in ophthalmic practice where pterygium has to be removed. Dr. W. N. Forster reports two cases, and refers to a third, where it effected this purpose. He gave the 3x internally, and used an aqueous 1x by instillation.—*Medical Century*, May, p. 152.

Heart-medicines.—In a paper presented to the Paris International Congress, and translated in the February No. of the *Monthly Homœopathic Review*, Dr. Bernard Arnulphy adds his weighty testimony to the value of cratægus as a cardiac tonic, he having experienced its good effects in his own person. He also speaks warmly of naja in endocarditis, acute and chronic, especially where the mitral valve is the seat of disease. This he gives from the 6th to the 30th, but cratægus in the mother-tincture. Some further facts about the latter drug are brought together later on in the same journal (p. 94).

Hellebore.—Dr. Cooper has "A Note on the Hellebores" in the *Homœopathic World* for April, in which he adduces reasons for believing the case of poisoning numbered II. 2 in the "Cyclopædia of Drug Pathogenesy" under "Veratrum viride" to have been really caused by the helleborus viridis, which belongs to quite a different order.

Hypericum.—Dr. Talcott reports a case of progressive muscular atrophy due to a spinal injury where Dr. Seguin prophesied death within two years, but where hypericum so checked the disease and improved the condition that after twenty years the patient still survives.—*North Am. Journ. of Hom.*, March, p. 153.

"Hypotensive medication."—By this name Dr. Huchard describes the continued use of such drugs as amyl nitrite and trinitrine, with a view of relaxing undue tension in commencing arterio-sclerosis and other such conditions. Wishing to find a slower but more lasting relaxant of the vessels, he thinks he has found it in "tetranitrol," a nitrite of erytrol, the action of each dose of which lasts for four or five hours, so that three in a day will suffice for the purpose.—*L'Art Médical*, April, p. 371.

Oleum olivæ.—Cohnheim advises wineglassful doses of olive oil, taken before food, as giving great relief in painful affections of the stomach; and Mathieu confirms the recommendation.—*Hom. Recorder*, April, p. 174.

Onosmodium.—Dr. A. B. Norton contributes his weighty testimony to the value of onosmodium in headaches from eye-strain. Even when the proper correction of refraction cannot be made, great amelioration will follow the use of the drug. A tired feeling, locally and generally, is a great indication for it.—*New England Med. Gazette*, March.

Phosphorus.—Dr. Allen reports a cure with phosphorus 7 of a case diagnosed in the old school as progressive muscular atrophy. This is in the April number of the *Homœopathic Recorder*. In that for May, Dr. McIntyre, of Chicago, criticises the diagnosis while recognising the cure. He would class the case as a form of neuritis.

Rhus.—A study of the action of rhus toxicodendron on the eye is excerpted from the *Homœopathic Eye, Ear and Throat Journal* in the *Monthly Homœopathic Review* for January. It is written by Dr. Charles Deady, of New York, and he makes several fresh applications of the drug. Among other things, he says that he has used it many times with complete success for the beginnings of sympathetic ophthalmia.

Terebinthina.—Dr. Marc Jousset records two cases of bronchial asthma in which striking benefit resulted from terebinthina, ten drops of the 1st dil. three times a day. He was led to its choice by coincident hæmaturia in the first case, but no such indication led to it in the second.—*L'Art Médical*, April, p. 149.

Thyroidin.—The run upon this substance is already showing a crop of pathogenetic effects resulting from its too lavish employment. A serious one lately reported is optic neuritis, with

associated lesions of the disc, more pronounced than in poisoning from tobacco or alcohol. Accommodative asthenopia also has been noticed.—*Hahn. Monthly*, March, p. 190, and *Monthly Hom. Review*, April, p. 224.

Tuberculinum.—Dr. Howard W. Long finds that this nosode, even if it does not cure phthisis, will greatly ameliorate the distressing cough. He gives the 15th dil.—*Hahn. Monthly*, March, p. 193.

Urtica urens.—Dr. W. H. Proctor relates two cases in which severe and long-lasting pain in the deltoid yielded rapidly to *urtica urens*, given on the supposition that the suffering arose from retention of uric acid in the system. Burning in the skin after sleeping was in one case the symptom which led to its choice. The remedy was given (after Burnett's manner) in tendor doses of the mother-tincture.—*Amer. Homœopathist*, April 15, p. 126.

THERAPEUTICS.

Aortitis.—Dr. Jousset reports another¹ case of chronic aortitis, in which great improvement occurred under iodide of sodium, followed up by sparteine.—*L'Art Médical*, March, p. 181.

Cancer.—Dr. Van Deursen, of Lowell, Mass., reports three cases of ulcerated epithelioma of the face making a good recovery under the late Dr. J. S. Mitchell's plan of giving the 3x trit. of arsenic internally while dusting the 2x trit. over the sore.—*N. Eng. Med. Gazette*, February.

Dysmenorrhœa.—A lady, aged 26, dark hair and blue eyes, rather stout, very nervous, had for several years been obliged to keep her bed for two or three days during menstruation. About eight hours after the appearance of the menses she had the most excruciating pains, sometimes in the ovarian region, sometimes all through the abdomen, often accompanied by headache, nausea, and vomiting. She could only obtain relief by keeping warm in bed and applying hot fomentations. She got magn. phos. in hot water every ten to fifteen minutes while the pain lasted, and the effect was so surprising that she thought she was taking morphia. After a few doses the pain was relieved and she fell asleep. After

¹ See vol. ix., p. 101.

three months of this treatment with magn. and calc. phos. she got so well that menstruation was no longer dreaded.—*A. h. Z.*, cxlii., 122.

Empyema.—Dr. O. S. Haines relates a case of empyema in an adult, where the matter found its way into a bronchial tube, and was expectorated. The recovery, which was perfect, seemed greatly furthered by the continuous use of calcarea sulphurica 3x (which Schüssler in the last edition of his book excludes from among his tissue-remedies because it does not conform to his theoretic canons).—*Hahn. Monthly*, April, p. 231.

Hemiplegia.—Dr. E. Boyer brings forward a case of hemiplegia which, remaining unchanged for five months after the primal stroke, began to improve at once on the administration of causticum, and went on to complete restoration of power, though the contractures which had supervened remained. The 6th and 12th dilutions were given.—*Revue Hom. Française*, April, p. 145.

Hydrarthrosis intermittens.—A case of this rare disease is contributed to the *Homœopathic World* of March by Dr. Macnish. The swelling came on Thursday in every week, alternating between the right and left joints. After failure of pathologically-indicated remedies this "clock-work periodicity" led to the choice of cedron, which, given in the 3x dilution, broke the spell; and the disease of nineteen years' standing gradually died away.

Orchitis tuberculosa.—Dr. Boessor, of Chemnitz, reports a case of acute orchitis occurring in a tuberculous subject, with no history of gonorrhœa or mechanical injury. Rapid improvement and speedy cure resulted from the employment of tuberculin 30. Similar results occurred in a like subject who had an acute painful swelling of the knee-joint.—*Hahn. Monthly*, Feb., p. 132.

Ozæna.—"Hamen treats ozæna with citric acid in the following way: The patient uses every morning a nasal douche and frees the nasal fossa as far as possible from pus and crusts. He then insufflates three times a day into the nostrils a powder composed of citric acid and sugar, equal parts. The odour disappears immediately and does not return for some days after the insufflations have been discontinued. Finally even the secretion is found to be diminished; while the effect on the general health and spirits is very marked."—*Pacific Coast Journal of Homœopathy*, April, p. 112.

Parotitis septica.—Dr. Biggar relates five cases in which septic inflammation of the parotid seemed to have been arrested by the administration of lachesis in medium dilutions.—*N. Amer. Journ. of Hom., March.*

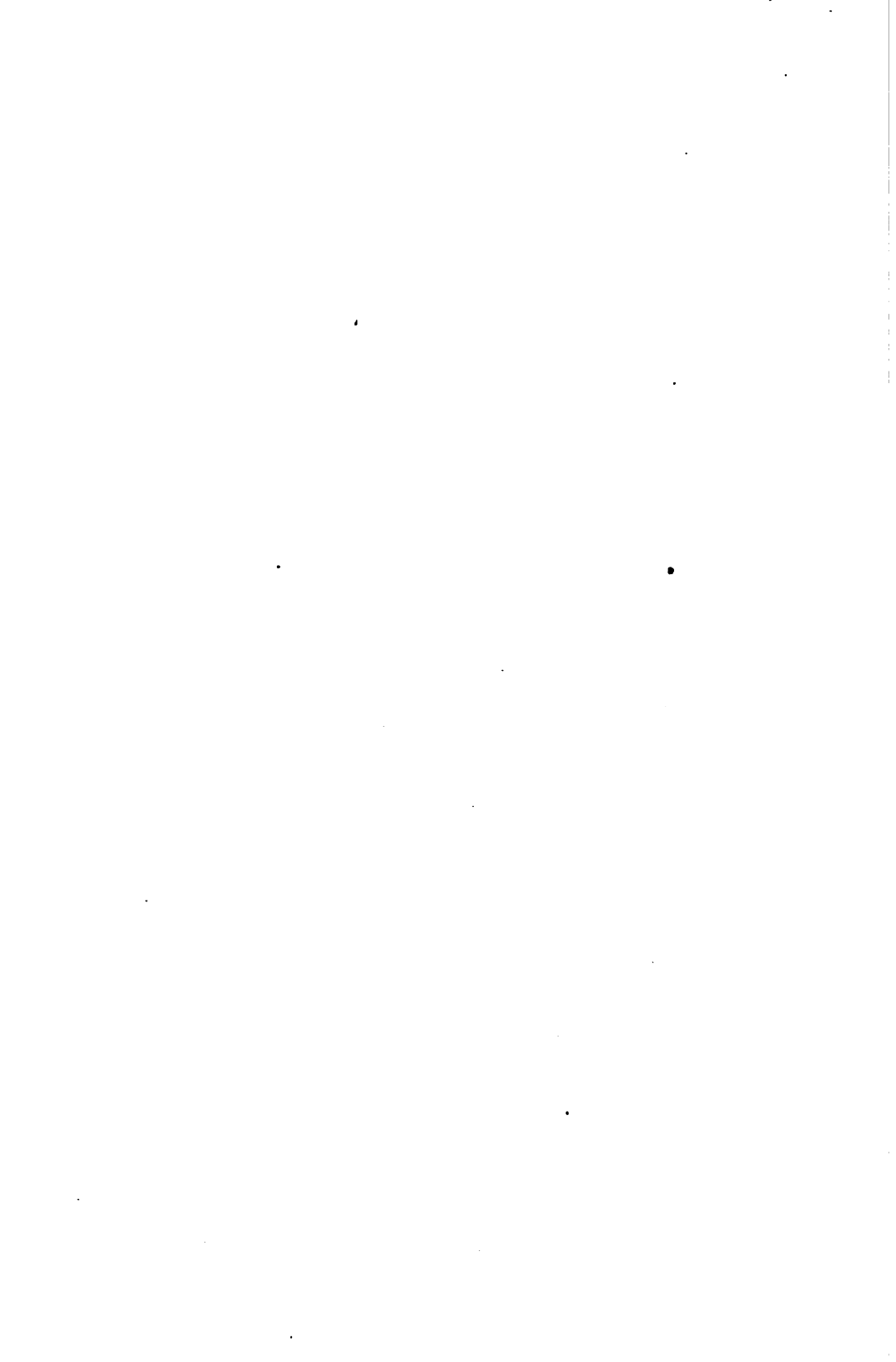
Sneezing.—In a victim of chronic sneezing (of eighteen years' standing), finding a sensation of crawling, prickling and dryness present, Dr. Schott gave wyethia, and by the end of three months the sneezing had permanently ceased.—*N. Amer. Journ. of Hom., May, p. 315.*

Tumours.—Mr. Hurndall, our veterinary colleague, contributes to the *Monthly Homœopathic Review* of December and January last two cases of tumours in dogs cured by homœopathic medication. In the first the growth was on the scrotum, and seemed fibrous; here calcarea carb. 30 proved curative. In the second the general health was gravely affected; and two growths were discovered "apparently slung in the mesentery, just posterior to the middle lobe of the liver." Here arsenicum was the remedy, in potencies rising from the 3rd to the 12th decimal.

Varicose Ulcer.—Dr. V. Leon Simon records a case of varicose ulcer of some months' standing, in which complete cicatrization occurred in nine days under the action of clematis 3.—*Revue Hom. Française, February, p. 56.*

Whooping-cough.—In an article on this disease in the *Monthly Homœopathic Review* of December, Dr. Roberson Day describes the treatment as "most satisfactory." His sheet-anchor is drosera, and this he finds acts best in the 30th dilution.

Worms.—For lumbrici and ascarides, Drs. M. M. Gardner and T. L. Bradford write to commend Teste's prescription of ipecacuanha, veratrum, and lycopodium, only giving them in lower potencies, and adding antonine 1x to the series. To kill ascarides locally, Dr. Bradford finds inunction of olive oil effectual.—*Amer. Homœopathist, March 1, p. 76.*



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*All communications and exchanges to be sent to DR. HUGHES,
Northfield, Albury, Guildford.*

TWO CASES OF BULBAR PARALYSIS WITH
PARTIAL RECOVERY AND REMARKS ON
DIAGNOSIS AND TREATMENT.¹

BY H. V. MUNSTER, M.D. EDIN.

Medical Officer to the Croydon Homœopathic Dispensary.

MR. PRESIDENT AND GENTLEMEN,—In bringing these cases before you I will proceed first of all to give a brief and much condensed summary of their salient points, and will then append some remarks, more especially with reference to diagnosis and treatment. It would occupy far too much of your valuable time to attempt either to go fully into the cases or to take up all the points of interest connected with this interesting but dire disease. I hope, however, that my remarks may serve to open up a prospect of a more hopeful prognosis than cases of this malady have hitherto tended to inspire.

Case 1.—Female, born 1873. Beyond mental instability in the case of one aunt there is nothing noteworthy in the family history, it being otherwise good.

¹ Presented to the Section of General Medicine and Pathology, May 2, 1901.

Patient had measles and chicken-pox as a child and also suffered from enlarged tonsils and adenoid growths. The hypertrophied adenoid tissue disappeared of its own accord, but in 1895 the tonsils were amputated on account of being enlarged and of their giving rise to repeated attacks of sore throat.

Present illness began in December, 1894, with an attack of right-sided ptosis, which passed off in about six weeks. In April, 1895, patient's speech began to be thick and another attack of ptosis (left-sided) came on about the same time. The ptosis recovered as before, but speech remained thick, and in December of same year patient began to see double. In April, 1896, patient observed that she could not close her lips properly, and that eating was becoming very difficult on this account and also on account of the tongue being weak. Liquids would also at times return by the nose. For the remainder of 1896 patient's condition varied according to whether she had much to do or little, being always made worse by any depressing circumstances. She was married in October, and in January and February, 1897, began to improve to a remarkable extent under a course of nux and iron. Patient had fallen pregnant also. In February it was noted, "No difficulty in eating now, palate hardly moves on phonation. Dry hacking cough, most troublesome on first lying down at night. Nails have become brittle and curved. Urine normal. Mind unaffected. Sleep good. Sensation both special and common quite normal. Gait and reflexes normal. Spine shows a tender area for about an inch above and below the cervico-dorsal junction. Right upper eyelid slightly drooped."

After this patient gradually recovered and remained well until March, 1898, having been confined in October, 1897. In March, 1898, after a good deal of extra household work, thickness of speech began to return, double vision re-appeared, then right-sided ptosis. By April eating and swallowing had become very difficult performances, and a new feature appeared in the form of weakness and tingling of the right arm and hand. A cold caught about this time gave the patient great distress all through May. Bronchial catarrh set in accompanied with expectoration, and the cough now present was very ineffectual and accompanied with great effort. Food would at times enter the larynx and excite severe paroxysms of coughing, often accompanied by rigor and rise of temperature for some hours. Abject despair would at times seize the patient on this account, but usually a quiet rest would enable her to resume taking food. Some 10lbs. weight were lost

at this time. Pregnancy had again supervened since end of March.

Three months at Scarborough under the painstaking supervision of Dr. Flint did not improve matters, but patient did not get worse. Dr. Flint at once diagnosed "progressive bulbar paralysis." On her return to Croydon in September I sent the patient to a well known specialist for nervous diseases in London, who reported the case to exhibit "the serious 'superior and inferior nuclear palsy,' degeneration of the oculomotor nuclei at the top of the pons and of the nuclei of the medulla below, with some of the gray matter of the cord, causing some wasting and weakness of the sternomastoids, the left pectoral and serrati muscles." Under treatment which he recommended patient began to steadily improve. A fresh cold early in December brought on troublesome cough again, which appeared to hasten the termination of pregnancy. Patient was confined on December 16, and two days later got very low indeed, developing a small patch of pneumonia at the base of left lung. By January 9, 1899, however, after a most anxious and trying illness, to the surprise and satisfaction of all concerned, our efforts were rewarded by seeing the patient begin to steadily recover.

Now, two years later, patient is in a fair state of health although by no means recovered from the wasting lesions which once narrowly threatened her life. There is still paralysis of soft palate, also of tongue, which is wasted, rugose, and always coated. There is some strabismus and slight right-sided ptosis, and the lips are decidedly weak and somewhat wasted. There also remains weakness of the muscles of the neck and arms and wasting to a slight extent. Yet there has been great improvement in every respect; patient is active on her feet, as also with pen and needle. She talks quite intelligibly and is able to look after her house and family. Eating is still a tedious process for her, but by carefully selecting her food and taking small meals frequently, she is able to take the requisite amount of nutriment.

A word now about treatment of the case: During April and May, 1896, electricity was given a good trial at a home in Harrogate with no appreciable advantage. A subsequent

change to the seaside did more good. Potassium iodide and mercurius biniodide were both given for a time, but did harm. Since the commencement of the illness there has been a persistent tendency to anæmia, for which iron in some form has been indispensable. Gelsemium in various strengths has been used, and at times it seemed to benefit the attacks of ptosis. One of these attacks vanished rapidly under alumina 3x and gelsemium 3x in alternation, concurrently with improvement generally. A long course of plumbum 30, alternated with gelsemium ϕ , during 1897, did no appreciable good. The one remedy that appears to have been most satisfactory is strychnine, which had been recommended as the only remedy likely to arrest or improve the condition. A 1 per cent. solution of nitrate of strychnine with 1 grain of salicylic acid to each ounce was used, and $\frac{1}{20}$ grain once daily was the dose commenced with, which was soon increased to $\frac{1}{10}$ grain, given hypodermically. When first commenced each injection was followed by noticeable improvement in speech within a few minutes. The treatment was intermitted several times for a few days, but on each occasion the patient seemed worse in consequence. It is only within the last few months that I have felt justified in using it less freely. The free use of atropine and belladonna was invaluable during the serious catarrhal attacks from which patient has suffered, arresting secretion for a time and thus enabling patient to gain a little rest from cough and expectoration. During the serious illness in December, 1898, rectal feeding was an immense help. Feeding by the œsophageal tube was once tried, but was followed by such severe spasm of the respiratory apparatus as almost to threaten life for a moment or two. Where possible medicines were given hypodermically while patient was at her worst in order to put as little strain as possible on the muscles of deglutition and to avoid bringing on paroxysms of coughing as far as we could.

Case 2.—This patient was sent me by a colleague who knew of the last case, on account of symptoms of bulbar paralysis. She came to me first in June, 1899, having just recovered from an

attack of bronchitis. She was still suffering from paralytic symptoms.

History.—Mrs. L., aged 49, mother of nine children of whom seven are living. Her father died of consumption while patient was a baby. Her mother died of a stroke, aged 63. She has three brothers and one sister, all well. One sister died of cancer, aged 48.

Patient has had two attacks of bronchitis, having just recovered from the second, during which the present symptoms first appeared. So bad was she that œsophageal feeding had to be adopted, but she began to improve when strychnine was injected hypodermically.

State in June, 1899.—Nasolabial folds well marked, lips not wasted, but patient is unable to whistle or blow out the cheeks. Tongue large and thickly coated. It can with difficulty be protruded beyond the lips and soon recedes. Speech is very thick (nasal) becoming very indistinct after much talking. General asthenia. Eating and swallowing are difficult and fatiguing, and the food clings round the recesses of the mouth. Movement of soft palate much impaired. Sensation for pain on front of left forearm and on left side of face seems wanting. Sense of heat and cold normal. Knee-jerks normal. Urine free of albumen. Mitral bruit.

Patient improved until a third attack of bronchitis in July and August caused a relapse. She recovered in great measure from this, but relapsed again in September and October with a fourth attack of bronchitis. Patient remarked that these attacks did not seem to come on like a cold, but more as a gradual invasion. From this she also recovered, but relapsed again in June and July, 1900. The picture in each of these attacks presented by the patient was that of chronic bronchitis plus bulbar paralysis. Both affections seemed to act prejudicially on each other as might be expected. There was very continuous and trying cough accompanied with profuse seropurulent expectoration. This latter was extremely difficult to raise on account of paralytic symptoms. Pulse rapid and irregular. Seldom much fever. Physical signs were most marked on the left side of chest, but never amounted to those of consolidation. Coarse moist sounds were everywhere present.

The last of these attacks was distinctly precipitated by great family worry. It came on gradually, patient keeping about and even coming to the Croydon Homœopathic Dispensary to see me for the first month or so. Eventually, however, patient was

obliged to take to bed, where for a time she seemed to go from bad to worse. She became so unable to take food towards the end of July that I was compelled to use the œsophageal tube, which always brought on terrible paroxysms of coughing. After about a week of this patient again became able to take sufficient food in the natural way, and I arranged for her to be admitted to the London Homœopathic Hospital early in August. During these illnesses strychnine and belladonna had been freely used in physiological doses and also such medicines as phosphorus, ant. tart., arsen. iod., kreasote, in various dilutions.

While in the Homœopathic Hospital patient was under the care of Drs. Blackley and Goldsbrough, and after about five weeks, returned home much improved. Dr. Goldsbrough has kindly informed me that the course adopted while patient was in the hospital was to treat the bronchitis and heart weakness. No doubt much of the benefit arose from the improved conditions of hospital life.

Early in October patient came again to the Croydon Homœopathic Dispensary with threatening of relapse, increase of cough, and expectoration, and returning paralytic symptoms of tongue and soft palate. I again prescribed strychnine by the mouth for a week or two in two or three drop doses of the liquor thrice daily, but without benefit. I then prescribed plumb. 3 ter die and bell. 1x 1h. whenever cough was troublesome, and agreed to call upon the patient the following week if she did not turn up. However she returned, remarking that it would have been a shame to let me call when she was feeling so much better. Since then she has had the plumbum 3 regularly, and improvement has continued. She has had in alternation besides bell. 1x, ignat. 1x, and later lycop. 3 for dyspeptic symptoms. The improvement was so marked and unexpected after the exhibition of plumbum that I have not hesitated to give it the credit. It is the more gratifying also because of plumbum bearing perhaps the closest homœopathic relation of all medicines to bulbar paralysis.

For the last two or three months, that is during February, March and April, patient has been suffering from another attack of bronchitis, but there has been no return of the paralytic symptoms with it.

In remarking upon these cases I find I must confine myself to the consideration of diagnosis and treatment, with a brief reference to prognosis. I want also to specially dwell upon the homœopathic aspect of treatment.

DIAGNOSIS.

The first case exemplifies the great difficulty of making an accurate diagnosis in the early stages of some cases of bulbar paralysis. When the ptosis and diplopia first appeared they were attributed to rheumatic neuritis. Later on the case resembled more such a condition as might be caused by some specific infection, as lead poisoning, syphilis (particularly recurrent ptosis), tubercle, diphtheria, and later still opinion was divided between organic and functional disease.

In the second case the paralytic symptoms came on as a complication to chronic bronchitis, obviously adding much to the difficulty of combating the latter ailment. That they were of bulbar origin cannot, I think, be disputed, but I would in this case be more open to conviction as to their functional character than in the first case, and I shall listen with interest to what those gentlemen who saw the case in the London Homœopathic Hospital have to say about it.

The conditions which are apt to be confounded with typical progressive bulbar paralysis are as follows: (1) pseudo-bulbar paralysis; (2) paralysis of bulbar nerves of neural origin; (3) syringomyelia; (4) multiple sclerosis; (5) tumours affecting the bulb; and (6) asthenic bulbar paralysis.

(1) *Pseudo-bulbar paralysis* arises from acute softening in the cerebral hemispheres so situated as to cause paralysis of various bulbar nerves. It has, however, a sudden onset, and is accompanied by an altered mental state usually, and is often more or less unilateral. It may therefore be excluded.

(2) *Paralysis of bulbar nerves of neural origin* could not account for the symptoms in either case. Rheumatic neuritis is out of the question. Although lead has produced most of the symptoms of the disease, it has always other more characteristic effects, which are wanting in these cases. There is no history of an attack of diphtheria prior to the onset of the disease in either case. Moreover, the course of diphtheritic paralysis is never so long lasting as the symptoms have been in these cases.

(3) *Syringomyelia* has been known to cause bulbar paralysis by extension of the morbid process upwards from the spine. It is, however, accompanied by its characteristic loss of sensation to pain, which is absent in these cases. The transient loss of sensation for pain observed in Case 2. can be otherwise explained, I think.

(4) *Multiple sclerosis* may readily be excluded by the absence of any of its more constant phenomena.

(5) *Tumours affecting the bulb* may be excluded, for the following reasons, I think: absence of pain, of optic neuritis, and of any continued affection of sensation. The wide range of the nervous system affected in Case 1 would go against the idea of any new growth. There is, moreover, no history of syphilis in either case, and no evidence of tubercular lesions elsewhere in either patient.

(6) *Asthenic bulbar paralysis*, or bulbar paralysis without anatomical foundation, is a rare condition, which must be carefully considered, particularly in relation to Case 2. In Case 1 I think it can be excluded, by the presence of fibrillary twitchings in affected muscles and wasting. The second case is more closely allied to this form of illness, where there is usually a depressing cause and a marked general myasthenia. In this case, bronchitis and worry were both depressing enough circumstances, and there has been, and still is, considerable general weakness of muscles.

I would therefore classify Case 1 as an example of chronic progressive bulbar paralysis presenting unusual symptoms and running a most favourable course. Case 2 I look upon rather as an example of asthenic bulbar paralysis or bulbar paralysis without anatomical foundation. I submit that the stigma of hysteria should never be put upon any case unless it can be proved not to belong to any known disease group. Only a month or two ago this point was forcibly pressed upon me, by a fatal termination to a case which I had regarded as hysterical at first. The patient was a very neurotic servant girl, whose disease picture kept changing from day to day in a most unaccountable manner, but the diagnosis of meningitis was eventually forced on me by the fatal issue.

As regards prognosis, I have only to remark that these cases ought to cause us to look a little more hopefully upon patients presenting symptoms of bulbar paralysis, than has hitherto been the custom. In the first place the exact diagnosis of a case cannot always be made at once, and even in the serious nuclear degenerative form of the disease there would seem to be considerable hope of arrest at an early stage of the malady in young subjects.

TREATMENT.

Apart from homœopathy I think there has been considerable advance made in the treatment of bulbar paralysis of late years, at all events in one direction; namely, in the substitution of strychnine for the use of electricity, so much practised in former years. The earlier accounts of the disease by Duchenne⁽³⁾ and his contemporaries, by Erb⁽¹⁾ and even by Bramwell⁽⁴⁾ contain nothing to inspire much hope of either arresting or curing the malady. They all recommend electric treatment. Erb even warns against strychnine being used. Bramwell goes into the question of hydrotherapy and massage, methods which might have their place where exercise could not be taken. With Case 1 I felt satisfied that anything in the way of a shock always acted prejudicially upon the course of the disease, whether electrical or that from hot and cold sponging. Even very weak electric applications seemed only to exhaust the patient and did no good. Fatigue has always acted in the same way, whereas absolute rest for a day or two has often seemed to work wonders for the patient. Gowers⁽⁵⁾ writing in 1893 speaks with more hope than any previous writer I have studied, particularly of cases occurring in the first half of life. In those cases he has found the hypodermic use of strychnine give good results, and you have a very good example of that in Case 1. Collins⁽²⁾ in a most interesting article on the disease in "Twentieth Century Practice" condemns the use of alcohol, tea and coffee, and probably with good reason, for I never found them agree with Case 1, in which they were tried. Cocoa he commends. Like other authors he lays stress

upon the importance of proper feeding in order to maintain nutrition. It is all important to give food that requires little or no chewing, so as to rest the tongue, lip and throat muscles. Judgment must be used in relation to the œsophageal tube. In some patients the very idea of it terrifies, and its use may be attended with serious results, as in Case 1. In Case 2 I think it was distinctly useful. Neither Gowers nor Collins speak favourably of electricity as influencing the course of the disease, and both agree as to the usefulness of strychnine. Collins states that it is the most satisfactory tonic, but curiously enough, that it should not be given hypodermically. With this my experience does not agree, as I have found nothing but benefit follow the injections. He has nothing favourable to say of nitrate of silver, phosphate of zinc or ergot. Like Erb he mentions that tracheotomy as an expedient to avert suffocation when threatened may be thought of. The friends of these patients ought to be shown how to invert them in case of liquids getting into the air passages below the larynx. A simple plan, which I owe to Dr. Flint, is to lay the patient prone on a sofa or couch, and then make them lean over on their hands placed on a footstool or on the floor. The lung into which the fluid has entered should, of course, be uppermost.

I now pass on to consider the *homœopathic* treatment of bulbar paralysis, which I have gone into with considerable pains, for it does not appear to have been very well worked out. Dr. Hughes in his excellent work on Therapeutics puts plumbum in the forefront, and I think correctly, but gives a place also to belladonna and anacardium which latter is said to have "cured" (?) a case. In his "Prescriber" Dr. Clarke mentions causticum besides belladonna and plumbum. Dr. Hale in his "Practice of Medicine" considers lachesis, causticum, hyoscyamus, gelsemium and arnica worthy of trial. Thus we have eight remedies suggested. The result of my study leads me to suggest sixteen remedies which are more or less related to the symptoms of bulbar paralysis. I have included oculomotor symptoms among those which are characteristic of the disease, as cases like my first patient have been met

with more than once. I divide the sixteen remedies in question into four groups as follows :—

Group I.—Metals.

1. Plumb. 2. Barium. 3. Zincum. 4. Argent. Nit.

Group II.—Deliriant Narcotics.

5. Belladonna. 6. Duboisin. 7. Hyoscyamus. 8. Stramonium.

Group III.

9. Gelsemium. 10. Conium.

Group IV.—Six unrelated drugs, viz. :

11. Guaco. 12. Crotalus. 13. Dulcamara. 14. Anacardium. 15. Arnica.
16. Sulphur.

(1) PLUMBUM.—I think this remedy merits a place at the head of the list of homœopathic medicines for chronic bulbar paralysis. Its effects in cases of chronic poisoning closely simulate those of the disease in question, as the following quotations and symptoms from the "Cyclopædia of Drug Pathogenesis" appear to show. It says there of lead palsy that "it is usually limited to one or several muscles, or to the muscular apparatus of one limb. It most frequently attacks the muscles of the upper extremities, especially their terminal portions, then the lower, rarely the trunk, less rarely the vocal apparatus. . . . When the paralysis has lasted a long time, there is noticed a flaccidity, a wasting, an extraordinary emaciation of the parts. . . . All the lead paralyses are slow, gradual, and progressive in their course." The following is a quotation from a case of chronic poisoning:—"Trembling of voice, speech embarrassed, trembling of tongue, and twitching of its muscles." Other symptoms often noted are dyspnoea and palpitation on exertion, diplopia, congestion of apex of one lung with dry cough, hæmoptysis. Such symptoms disappear quickly when the cases are removed from the sources of lead poisoning. Respiration is paralysed rarely, and then is usually due to the intercostal muscles being attacked: but apart from this, extreme dyspnoea is of frequent occurrence in lead workers, accompanied by, and perhaps dependent on,

laryngeal palsy. A case of bulbar paralysis reported in the *Medical Annual* for 1896, p. 190, with illustrative plates, shows very well the similarity of disease and drug effects, if read in reference to these remarks.

(2) **BARIUM.**—Ptosis, diplopia, speech unintelligible, aphonia, salivation, rapid action of heart and sounds muffled, cough, shallow breathing, and paralysis of respiration. These are symptoms in the pathogenesis of barium similar to those occurring in bulbar paralysis. They ought to lead to its being given a trial.

(3) **ZINCUM.**—Besides producing general paresis, this drug causes ptosis, diplopia, frequent palpitation with oppression of chest, croupy attacks with tendency to choke, cough.

(4) **ARGENTUM NITRICUM** appears to produce asphyxia and bronchorrhœa in poisonous doses, by acting on the respiratory centre in the medulla. Its relationship to bulbar paralysis would hence seem limited, more so than any of the preceding drugs.

It occurs to me to suggest that in a given case a metal ought to be selected for regular use. No other drugs seem to go so deeply to work in their action on the nervous system as do the metals; and a deep action—one capable of producing organic changes—seems necessary for a true similarity to the chronic form of bulbar paralysis.

Group II.—(5) **BELL.**, (6) **DUB.**, (7) **HYOSC.**, (8) **STRAM.** All of these produce symptoms similar to those found in bulbar paralysis, but I will only take up belladonna as at once giving us the most useful drug of the group and the widest range of similar symptoms to those of bulbar paralysis. Under its effects we have articulation paralysed, impeded action of tongue, speaking and swallowing difficult, inability to protrude the tongue, cough, râles over the chest, diplopia, ptosis, quick pulse, and irregular heart action.

I think medicines of this group will be found to have a most useful place in combating troublesome symptoms, such as cough, sleeplessness, &c. They should be prescribed with the greater confidence because of their power to pro-

duce effects similar to those more characteristic of the disease.

Group III.—(9) GELS., (10) CON. These both produce impairment, muffling and paralysis of speech, paralysis of deglutition, ptosis, diplopia, paralysis of heart and respiration. Conium has, in addition, saliva increased, dry cough, congestion of lungs.

I regard this group as specially useful in combating acute exacerbations, which are prone now and then to take place in the course of bulbar paralysis, *e.g.*, attacks of ptosis, temporary increase of strabismus or of dysphagia, &c.

Group IV. must be considered individually.

(11) GUACO.—There is an interesting note in the "Cyclopædia of Drug Pathogenesis" about this drug which runs somewhat thus: Dr. Elb, a prover who had taken 5 to 20 minims of the tincture, remarks, "The following very constant phenomena should not be discarded, *viz.*, difficult deglutition, there being no inflammatory affection; constriction of the larynx and trachea; deafness; heaviness of and difficulty of moving the tongue." It is interesting to note these symptoms, for this remedy is commonly used in America as an antidote to the poisonous effects of snake-bites. This leads us naturally to consider—

(12) CROTALUS.—It has diplopia (in a prover); salivation; difficult articulation and deglutition; quick pulse; cough, and difficult respiration. Thus the actions of poison and antidote seem very similar! Doubtless lachesis has a closely similar action to crotalus, but although Dr. Hale speaks of it as a drug likely to be of use, I think it must give place to crotalus in the treatment of bulbar paralysis if symptomatology is to be the guide. I know of no clinical experience with either of the drugs. Guaco 3x I gave to Case 1 for a week, but as patient seemed a little worse, I discontinued it without further trial. Possibly a higher dilution might have proved beneficial.

(13) DULCAMARA has indistinct articulation, quick pulse, salivation, general paresis.

(14) ANACARDIUM has, according to Hahnemann, diplopia; articulation embarrassed; tongue heavy and feels large;

cough. I would not have included this remedy, save for its mention by Dr. Hughes above referred to.

(15) *ARNICA* has diplopia; drooping of eyelids; powerlessness of limbs, especially left wrist; dry constant cough; tightness of chest and difficult respiration; irregular, feeble, and hurried pulse. Its place would seem to be in cases of an acute type, due to some acute lesion such as hæmorrhage, and especially if there were any history of injury.

(16) Lastly, *SULPHUR*, a remedy which seems more or less adapted to every chronic ailment, has articulation difficult (Hahnemann); diplopia (female prover taking 1x and 2x trit.); feeling of weight in the eyes; salivation; cough with expectoration; pulse irregular and quick. After smoking three pipes full an individual went to sleep for an hour, then woke up with intense dyspnoea and sense of impending suffocation, severe constriction of chest, extreme faintness, vehement palpitation.

Causticum, I think, can hardly be given a place in the disease. I cannot find any symptoms in the Index to the *Cyclopædia* which give it a place in bulbar paralysis. That may, however, be the fault of the book and not of the drug, but I have confined my study pretty much to the *Cyclopædia*.

Of the sixteen drugs above referred to, four seem to stand out prominently, viz., plumbum, belladonna, gelsemium and guaco. In the history of my case, I have referred to the use I have made of these drugs, and I think the first three have all been useful at times. All the remedies belonging to group IV. require to be tested before much can be said about them from the clinical aspect.

REFERENCES.

- ¹ "Ziemssen's Cyclopædia of Medicine," vol. xiii., p. 909. 1878.
- ² "Twentieth Century Practice," vol. x. 1898.
- ³ "Manual of Nervous Diseases." 1893.
- ⁴ "Atlas of Clinical Medicine," p. 103-120. 1892.
- ⁵ "Selections from Duchenne." New Sydenham Society. 1883.

Mr. DUDLEY WRIGHT (in the Chair), after congratulating the author on the clear and interesting account which he had given of his two cases, said it was gratifying to know that bulbar paralysis was not the fatal disease it was generally represented to be.

Dr. BLACKLEY said that the second case mentioned by the author was under his care for a very few days, subsequently being under the charge of Dr. Goldsbrough, who appeared to have greatly benefited the patient while she was in the hospital. The author also seemed to have done even better for her since she had left the hospital. In listening to the case he had been particularly interested, especially with regard to drug treatment. It was a fact that with plumbum and most of the other mineral poisons the symptoms were at any rate approximately symmetrical and not unilateral. The same principle held with all general poisons, such as diphtheritic poison for example, but with plumbum it was particularly so; and he did not think we ought to boast about the homœopathicity of plumbum when the patients exhibited symptoms which were only found on the one side, such as paralysis of one of the vocal cords. He would like to have debated the question of the probable neurotic origin of the second case, because such cases were seen occasionally. Those members who were present at the clinical evening last year would remember a girl shown by him suffering from hemiplegia. The patient had had an attack during the previous year in Liverpool, and was in the Hahnemann Hospital under the charge of Dr. Ellis. She got quite well at the end of seven weeks, but the second attack in London lasted nearly three months. In the end she made a sudden and complete recovery. When she was shown at the clinical evening there was complete hemiplegia of the most typical kind. She was treated first of all for some weeks without drugs, receiving nothing but *saccharum lactis*, without any change in her condition; when properly indicated drugs were given her she began to improve, but finally took a sudden turn for the better, and within about ten days was sufficiently well to walk about the wards and go out. He was perfectly convinced that it was a purely functional hemiplegia. He did not suppose the author's case was a similar one, but such cases had to be reckoned with. They almost invariably occurred in women or girls. In listening to the first case he was struck with the very satisfactory way in which gelsemium seemed to act. The symptoms narrated by the author called to his mind some

symptoms which he had present in a case which he published a long time ago of writers' cramp, where diplopia was one of the symptoms. Diplopia was a very constant symptom of the proving of gelsemium where large doses had been taken. A case of gelsemium poisoning was recently reported in the *British Medical Journal*, in which diplopia was a very marked symptom.

Dr. STONHAM asked whether the author had any theory as to the action of strychnine in his case, which seemed to have been a most beneficial medicine.

Dr. MUNSTER, in reply, said that Dr. Blackley had spoken of the action of plumbum as being bilateral. Bulbar paralysis was also a bilateral lesion and not unilateral. That rather argued in favour of plumbum being homœopathic to it than otherwise. He also spoke of Case 2 probably being functional. That was the conclusion he had in his own mind in calling it *asthenic* bulbar paralysis, which was bulbar paralysis without anatomical foundation. Dr. Goldsbrough, in writing to him about the case, said that his view was, that the extreme coughing had probably caused a small hæmorrhage of the bulb which accounted for the symptoms. He was sorry Dr. Goldsbrough was not there to argue his point, as he was quite open to conviction on it. His own opinion was that it was a case rather of a functional paralysis than otherwise. He had no theory to offer in relation to the action of strychnine beyond the fact that it was reputed to act on the respiratory and cardiac centres, as in cases of pneumonia, and possibly also it acted on other bulbar centres.

ABSTRACT OF AN ADDRESS ON "THE METHODS OF CHOOSING DRUGS HOMŒOPATHICALLY."¹

BY THOMAS H. HAYLE, M.B.LOND.

THERE are two methods of choosing drugs homœopathically, viz., the repertorial and the diagnostic.

The repertorial.—This method seems stiff, artificial and unscientific; it is often erroneous and apt to lead us astray and takes a long time. The following are the reasons which support this view: (1) The symptoms which any one drug will set up in different individuals are very various and differ according to the constitution of the prover. For instance, a drug which causes, say catarrh of the nose, will have very different signs of that catarrh; in some people it will set up a thin irritating discharge, in others it will cause a bland, thick discharge, so that the fact of there being a thin, sanious discharge would not contra-indicate the use of the drug as a medicine in a person who might have a thick bland discharge. Of course when provings are very extensive we get all sorts of symptoms from the different constitutions' of the provers, which makes it difficult to choose the right medicine from the numerous individual symptoms recorded, whereas, if the nature of the action of the medicine on each point were recorded, we could more easily choose a medicine for the corresponding disease of the patient under consideration. (2) A great many of the symptoms in repertories are not accurate and are trivial, and very often the same symptom is differently worded by the prover, and leads to a very complicated state of things. (3) If we conscientiously take many symptoms in any complicated case, and try and work them out in a repertory, we very often at the end of a long search come out with very various medicines for the same patient.

The diagnostic method.—This method I believe to be the only scientific method of choosing medicines homœo-

¹ Presented to the Liverpool Branch, May 9, 1901.

pathically, but to carry it out properly it is necessary to have a scientific *materia medica*. The actions of medicines on the healthy ought to be carefully diagnosed, and in the present day of accurate knowledge I am sure this is possible. The drugs ought to be carefully arranged in families, for I believe evolution holds in drugs as in most other things, and by carefully studying the most active members of each family we might simplify our *materia medica*. Thus, if we have a set of active medicines whose actions are well understood, and carefully diagnose the state of our patient, we can readily find a suitable medicine for that state without having to hunt through an innumerable list of individual symptoms arranged in a most unscientific and disjointed manner.

Dr. HAWKES said that he disagreed with Dr. Hayle in his estimate of the value of repertories. Whilst it was impossible to know the pathogenetic *materia medica* too well, and our study of it ought therefore to be our chief care, yet the oldest and the most experienced often had difficulty in calling to mind the particular drug required to meet the necessities of each case, and personally he had found repertories, notably the "Cypher Repertory," of the utmost value in assisting the memory in the recognition of the *simillimum*. He strongly disapproved of alternation, believing that if once the principle of alternation be accepted, we might as well return to the polypharmacy of the old school.

Dr. WHITAKER agreed with Dr. Hayle in his condemnation of repertories. He thought that the large number of subjective symptoms contained in repertories rendered them uncertain, if not actually misleading guides. We had no guarantee that the provers' descriptive terms had been accurately chosen, whilst even if true they were in many instances capable of very varying interpretations. He strongly upheld the plan of first finding out the pathology of our patient's condition, and then of following up our diagnosis by the exhibition of a pathologically similar medicine chosen from the *materia medica*.

Dr. CASH REED feared that the method of drug provings had produced a crop of symptoms which owed their existence to the almost morbid introspection which provers almost necessarily undergo. Personally he preferred, where possible, to found his treatment on a pathological basis, and pointed out several

instances where the pathogenetic effects of drugs shewed the most striking similarity to that of diseased states.

Dr. LUCAS HUGHES believed in the usefulness of repertories. He used Bœnninghausen's and found it particularly serviceable in the section dealing with the relationship of medicines. Clarke's "Prescriber" had proved very useful to him; he thought its style and its clinical arrangement more adapted to the needs of the busy general practitioner.

Dr. MURRAY MOORE believed in repertories, and also in key-notes. In regard to key-notes he had found those marked in Allen to be reliable. The stress which American practitioners were accustomed to lay upon the conditions of aggravation and amelioration was very great, amounting almost to the decisive feature in a prescription. He believed in this generalisation, and in connection therewith repertories, particularly Lippe's, were exceedingly useful. Dr. Moore also referred to the late Dr. Drysdale's classification of symptoms as (1) absolute and (2) contingent.

Dr. GORDON SMITH (in the chair) acknowledged the difficulty which the personal equation, *i.e.*, the individuality of the prover, has upon the proving, but maintained that the urgent need of our time was the re-proving of drugs. Provings could not be shorn of their subjective symptoms, however trivial or fantastic they may appear to be, yet some idea of the relative values of subjective symptoms might be got by carefully noting and tabulating, in the records, the number of provers in which each particular symptom showed itself. The "Cypher Repertory" he had found to be of the greatest possible service in his practice.

THE LAW OF DOSE IN HOMŒOPATHIC THERAPEUTICS: ITS CORROBORATION BY RECENT RESEARCHES IN THE PHYSIOLOGY OF THE NERVOUS SYSTEM.*

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I.—THE LAW OF DOSE.

By the law of dose in homœopathic therapeutics I mean, that in the selection of a drug as a medicine according to the rule *similia similibus curentur*, the quantity administered should, at a given time, be less than that required to produce the physiological effects of the drug in health. Arguments by way of substantiation of this statement as having the force of a law are scarcely called for. It expresses without doubt the invariable practice of all who consistently apply the rule *similia* in the treatment of disease. In looking over the literature of the subject I find it treated by many writers both in this and foreign countries. I believe that the last public discussion of the subject took place at the International Homœopathic Congress held in London in 1896. On that occasion Dr. Vincent Léon Simon, of Paris, read a communication to the Congress in which he formulated the law thus: "The therapeutic dose should be like the pathogenetic dose, with this reservation, that the first ought always to be lower than the second."¹

A general consensus of opinion supports Dr. Simon's view of the subject.

It is no part of my purpose on the present occasion to enter into the history of the formulation of this law—it is firmly established on an empirical foundation. The small dose has been found to cure when the large one has failed or has produced unpleasant or undesirable effects, and so wide has been this experience that the small dose is

* Presented to the Section of Materia Medica and Therapeutics, June 6, 1901.

invariably used. Numerous explanations from the biological standpoint have been offered as to why the small dose is the best dose, but as yet there is a lack of agreement as to which explanation is the true one. The chief of these are, first, that the organism is more sensitive in states of disease than in states of health, and secondly, that drugs produce opposite effects in large and small doses, and that the small dose of a drug which will produce prominent effects in health, in a patient suffering from symptoms similar to these effects, will act as an antagonist to his disease and so prove a cure. The former view I believe to be well grounded both theoretically and practically, but the latter I cannot regard as tenable, at least as far as the notion of the opposite character of the symptoms is concerned, or, indeed, the antagonism of a drug to any set of symptoms. Such a view I believe to be superficial and biologically unsound. I do not wish to enter here on a discussion of this aspect of the subject, and for the purpose of this paper my own views are not included in a presentation of the facts and analogies about to be brought before you, except, indeed, this trite and extremely general view, namely, that if the small dose is necessary for a cure that necessity must have its foundation primarily in some physiological law, some uniformity of working or invariable sequence in the processes of life. It is towards a correlation or an establishment of this position that the subject is brought under notice, in the belief that any facts in physiology brought to light, or any conclusions established, which tend to corroborate the principles which guide physicians who practise homœopathically, are not without their effect in aiding that practice, and that they go some way—though perhaps a very little way—towards approximating the therapeutic views of all practitioners of medicine.

I wish to consider the small dose without reference to or prejudice as to how small it should be. My consideration of the subject will accordingly exclude any question of physical division, and more especially what is known as a theory of dynamisation. I hope I shall not be thought, on this account, to be leaving out the most interesting part in

our controversies on the dose question, because to me such controversies do not appear to be particularly fruitful. My hope is that the facts brought forward may be regarded by the Society, as they seem to me, to form an analogy which really corroborates the law of dose as above stated, from the physiological standpoint. The important bearing this analogy will have on the question of *what is the best dose in a case of disease*, will, I trust, lead to a fruitful discussion. In any case my standpoint is the physiological one. I wish to bring forward a certain class of facts discovered in relation to the behaviour of nervous tissue under certain conditions and towards certain stimuli, which to my mind are strongly suggestive, that in giving the small dose in cases of disease we are endeavouring to elicit effects which are parallel or analogous to this behaviour, and that an exhibition of the analogy corroborates our practice as acting in consonance with a law of nature, such corroboration being second only in importance to a corroboration of the rule *similia* itself.

II.—SYMBOLIC REPRESENTATION OF THE PROBLEM.

In the discussion of a problem of so much generality as the one before us, it is necessary to be perfectly clear as to the relationship of the abstract ideas which it is absolutely necessary to invoke in a consideration of the subject, and also as to the meaning of the terms used to designate them. The accompanying diagram may be of service as giving a symbolic representation of these ideas and terms :

$A =$ Environment.

$B =$ Organism.

$X =$ Special Stimulus.

$Y =$ Special Result.

Symbol of Ordinary Health.

$A : B.$

Symbol of Experimentation.

$X : Y.$

$A : B :: X : Y.$

XA leads to $YB.$

XA never equals $YB.$

For the purpose of my argument I follow the lead of Dr. Waller, in his description of his experiments presently to be described,² but I amplify the series of symbols he adopts in a manner necessary for the wider range of phenomena and principles which we have to cover.

The facts and conditions with which we have to deal can be summed up under four terms. These are the *environment* (*A*), and the *organism* (*B*), with special stimuli (*X*), and special effects (*Y*). The two former terms (*A* and *B*) express the normal states of the environment, and of the ordinary healthy individual, or animal, or tissue to be experimented on. Thus the letters *A* and *B* may serve to indicate them. Thus under *A* would be included the energetic medium in which and by which the organism lives, which includes matter and movement acting as the ordinary stimuli of all kinds to an organism, mechanical, thermal, electric and chemical. The life of the organism from one aspect of its phenomena consists of an equilibrium of interchange between such a system of energy.

Under the term *B* would be included the total energetic value of the organism itself, consisting of the material parts of the body, and its movement in response to the stimulus of the environment, such response consisting of mechanical, thermal, electric, chemical, and distinctively vital reactions on the environment.

A familiar way of expressing the ordinary moving equilibrium going on between *A* and *B* is to say that the organism corresponds to its environment, which may be expressed by the formula $A : B$.

This formula then may be taken to indicate an animal or a tissue exhibiting life, about to be experimented on, or a person about to prove a drug for the purpose of eliciting its pathogenetic effects. If we accept this symbolism provisionally, and then assume that some special experiment has been performed, or some drug proved, we may characterise the experiment as a *special stimulus*, and its result as the *special result*. These elements may be symbolised (following Dr. Waller) by the letters *X* and *Y*. Now we must carefully note that the same principle holds as with *A* and *B*, that

although differing in nature X leads to Y and corresponds to it. Given an experiment X , the nature of which is known, and the result of which is observed, if the experiment be repeated under the same conditions the result is—

$$X : Y.$$

Thus the experiments I am about to describe, or the provings of drugs on the healthy organism, may be symbolised thus—

$$A : B :: X : Y$$

$$XA : YB.$$

Here let me guard myself with a most important proviso, which the adoption of the special symbols serves to bring out. XA leads to YB , but is never equal to it, that is, the energetic character of the formula cannot be expressed as an equation $XA = YB$. The discovery of such an equation has been the dream of physiologists of the nineteenth century, who broke away from the old vitalistic school and joined that of modern physicists. The equation of vitality can only be expressed in terms of itself. An intimate correspondence and interchange goes on, the factors on each side being a matter for observation and measurement; but from the side of such observation and measurement there is something in the organism compared with the environment which eludes both observation and measurement, and which at the best can be the subject of inference or generalisation. Or, as Claude Bernard put it more than twenty years ago, in life, as contradistinguished from physics, there are two orders of changes indissolubly connected—the phenomena of function, or vital destruction, and the phenomena of formation, or vital creation; these represent the two phases of vital work as compared to the one physical phase in the environment. This indissoluble relationship Claude Bernard describes as the axiom of general physiology, and it must never be lost sight of in comparisons of physical and vital phenomena. In my presidential address before this Society, I have tried to show that a great and final law of life may be expressed by a recognition of the second (formative)

class of changes being caused or conditioned by the first (destructive) class of changes, and that (given its origin) such an expression constitutes the best definition of life that can be formulated.

In a consideration of the subject at present under notice, a recognition of these aspects of life is most important. Let me repeat myself at the risk of wearying you. In attempting a symbolic representation of the phenomena there is something in *B* which is not in *A* which leads to the effects of *X* not appearing as *X* but as *Y*. What it is wished to show is that the action of different degrees of special stimuli (*X*)^A lead to relative effects in the natural order of changes in the organism (*Y*)^B which have an important bearing as a corroboration of the small dose in therapeutics. Any necessary references to the difference between health and disease will be made later.

III.—EXPERIMENTS ON ISOLATED NERVE AND END ORGAN.

Time will not permit of my describing to you in detail the method of the experiments on which the conclusion I wish to draw is based. Let me say here they are very elaborate in character, they cover a considerable period of time, they were conducted with the minutest care, and the results established after every condition was eliminated which could interfere with the correctness of those results. The names of Du Bois Reymond, Dewar, McKendrick, Holmgren and Waller are a sufficient guarantee for this statement. The experiments are summed up by Waller in his presidential address before the Neurological Society for the Session 1899-1900, and published in *BRAIN*, Spring No., 1900. Waller gives there a list of references to all the steps involved in the final experiments to which I wish specially to refer.

I can, perhaps, best lead up to my point by stating the steps involved in it in the form of conclusions at the outset, giving my authority and naming the experiments on which they are based in support of these conclusions. In adopting this plan I feel free from the danger of assuming my pro-

positions *a priori*, for the simple reason that I have to rely for the proof of my conclusions upon the observations of others.

Conclusion 1.—*Electro-motive force or energy is evolved from a nerve or its end organ, as a direct result of the normal changes which take place within the nerve-substance in response to a stimulus without.* The principle may be stated in another way,—that nervous tissue in its normal functions is a repository of electric energy. Such a conclusion is a commonplace of physiology, but it is necessary to refer to it here as the ground principle of my argument. I may add that we owe the establishment of this conclusion first of all to the experiments of Du Bois Reymond. It was educed by experiments on the eyeball of the fish. He connected the eyeball of the fish with the poles of the galvanometer, then on stimulating the retina with a galvanic current the result was shown by a deflection of the galvanometer needle. This was obviously only a first step in the full result, as electricity can scarcely be termed a stimulus of ordinary normal life. This result, however, led Dewar and McKendrick⁴ to test further whether a similar deflection of the needle resulted from the special stimulus of *light* on the retina. A large number of experiments were made for the purpose, the most elaborate apparatus was required, and minute precautions and measurements were adopted. Dewar and McKendrick found that from a given special stimulus of light, a strong deflection of the galvanometer needle resulted from the eyes of the rabbit, cat, dog, pigeon, tortoise, &c., the finest adjustment being adopted for neutralising any extraneous influences. The results were measured by adopting one uniform candle-flame at a certain distance from the eye-ball, and estimating that in relation to the state of the galvanometer needle at equal intervals of time; and a permanent record of the deflection was preserved by photography. I ought here to state that while Dewar and McKendrick were making their experiments the Swedish physiologist Holmgren was conducting a series similarly, but independently, and he came to the same conclusions. The importance of this conclusion to me at the

present time is (reverting to our diagram of symbols) that although light is generally part of the ordinary environment of an organism, part of *A* for example, a special degree of light can act as a special stimulus *X*, and as the ordinary electric changes in nervous matter are part of *B* normally, so upon the stimulus of *X* into *A* a certain additional effect recorded by the galvanometer is to be noted as *Y* in *B*. In this connection I would suggest that this is precisely analogous to what is done when a certain dose of a drug is given to test its effect on the healthy body, and if the dose is noted, and the results observed and measured, we have, I contend, subject to the establishment of my next conclusion, a precisely parallel series of observations. I know the effects of drugs are not all objective effects, many are subjective symptoms, and a remembrance of this fact raises the very important question at once as to the relation of objective and subjective effects. This question is far too large and intricate for me to consider on the present occasion, but I am bound to notice it, and under the conclusion suggest the point of view from which the subjective symptoms should be considered in the light of our method, and the observed results of experiment. Without making any attempt to rationally span the gulf which philosophy declares to exist between matter and mind, we may safely conclude that subjective sensations are most probably the correlative of the changes which take place in the nerve structures which can be observed to result from stimuli operating from without, plus the reaction of the brain function concerned in perception, and consciousness in perceiving. Accordingly, when an outward stimulus is said to produce a sensation, or any other subjective symptom as well as objective effects, these are to be accepted as additional effects expressed in the symbols *Y* in *B*, giving an additional value to *Y* over and above the observed effects, but considered in the light of what can be known of *B* as exhibiting outward effects and internal changes. When, however, subjective sensations alone are said to be produced by outward stimuli, as is the case in so many of our drug provings, their reality as effects is so much more difficult of estimation, as we all

know. Nevertheless, they have to be recorded as effects, and as true an estimation of them as real effects made as possible. In the light of these remarks I must also recall your attention to the fact that a distinct relationship has been observed between increments of outward stimuli and increments of sensation as determined by the reaction-time concerned in the production of the latter. What is known as the Weber-Fechner law of physiological psychology is the result of these observations. Increments of sensation do not occur as the result of similar increments of stimuli, but in a ratio of multiplication by 10, or the logarithm of the unit employed in the measurement. One remarkable result of Dewar and McKendrick's researches above referred to was that they discovered a similar ratio to exist between the alterations of electrical effects with varying degrees of luminous intensity, thus bringing outwardly observed effects into line with subjective sensations and *vice versa*, and confirming the latter as effects of stimulation. This fact is an important link in the chain of parallelism I am endeavouring to establish, and serves to suggest the perseverance in the careful noting of subjective symptoms as additional to objective. I come now to the next point.

Immediately before my remarks on subjective symptoms I pointed out that the parallelism between Dewar and McKendrick's experiments and our drug provings was complete with one reservation. That reservation may be stated in the form of a question: How can an isolated nerve and its end organ be taken as corresponding to the entire organism and be held to exhibit all the phenomena of life in their multiplicity in unity? An answer to this question leads me to my second conclusion.

Conclusion 2.—Nervous tissue in isolation from the rest of the organism can, for purposes of observation, be regarded as illustrating life in its entirety. This conclusion is based on a large number of experiments by Waller.⁵ He tested the effects of various drugs and reagents upon portions of excised and isolated nerves. He found this "tissue above all others" was suited to exact investigation of the chemical action of reagents upon excitable, that is to say, living matter.

It is necessary for me to give rough details of the method employed so that I may direct your attention to the exact point in question.

The nerve of the frog was excised and isolated in a special chamber of a regulated temperature and connected at an inlet with the two electrodes of an induction coil and at an outlet with the poles of a galvanometer, connected also with an automatic galvanograph. The nerve was proved to be alive and responsive to an excitement by the coil, the result being delineated by the needle of the galvanograph. A gas chamber was then connected with the apparatus and the effect of various gases upon the result of the electrical excitement was carefully noted. Carbonic dioxide, hydrogen peroxide, chloroform, ether, hydrocyanic acid, and several others were used. The effects in detail were found to correspond to the known effects of these substances in the living body, the registration by the galvanograph being the single symptom as it were of any action going on. It was found that the excitability of the nerve was practically inexhaustible as long as the stimulus was not sufficiently strong to extinguish all excitability whatsoever, as was the case easily with chloroform for example, and so sensitive was the nerve to a variation in the stimulus that the difference between atmospheric and expired air upon it, that is, 4 per cent. of carbon dioxide, was registered by the needle. Waller's experiments with this latter gas were very numerous. He explains the inexhaustibility of the nerve-fibre by the interchange of the protoplasm of the axis cylinder with the phosphorised fat of the sheath of Schwann and *vice versa*. He shows as the results of observation on the stimulus of electricity and various gases or reagents combined with the interchange between the axis cylinder and myelin sheath, that neuroplasm is chemically mobile in two directions, downwards in the direction of disintegration, and upwards in the direction of reintegration, but that these changes go on *pari passu*, they are, in fact, "one actually indivisible complex change" which, as I have mentioned earlier, is characteristic of all life.

As we shall have to deal directly with the stimulus of

light upon the retina, let me say here that as far as observation has gone, the end organs of nerves and their central protoplasm or cell-body are very much more exhaustible than the nerve-fibre. Such a point raises many interesting biological questions, but as I have to deal with the retina only I may say that this organ is specially provided with an apparatus for effecting the series of up and down changes characteristic of life as a whole. I refer to the relation of the retina to the layer of segmentary epithelium described by anatomists as lying between the rods and cones on the inside and the limiting membrane of the choroid on the outside,⁵ by means of which it derives its nourishment in a manner similar to the axis cylinder from the myelin sheath, and that such interchange goes on during the exercise of the ordinary function of the retina.

The representative character of nerve-tissue and its end organ as a sign of life is thus complete, and it seems to me one need have no hesitation in accepting results of experiments upon such tissue as *indices* of results which might be observed in the organism as a whole, and as parallel to our own observations upon the action of drugs. This leads me to my third and last conclusion.

Conclusion 3. That the response to stimulation of the eyeball to light, and inferentially of the healthy organism to ordinary or special stimuli, is relatively greater with a minimal than with a maximal stimulus. This conclusion is based upon the most recent experiments conducted by Waller, and is the one which indirectly furnishes the corroboration of the homœopathic law of dose. This conclusion, however, is based on the establishment of the truth of the two which precede it, as will readily be recognised. Waller set himself the problem to solve in the case of the nerve or retina as to how much responsive effect follows upon how much exciting cause. This he did with, at first, moderate stimulation, and then with minimal stimulation reaching up to a maximal. His results are set out in diagrams to illustrate the subject (diagrams 2 and 3).^{*} Here we have our X cause and Y effect as

^{*} By the courtesy of Dr. Waller these diagrams are reproduced from BRAIN, Spring Number, 1900.

suggested before, and the curve across the body of the diagram indicates the result of actual experiments, in

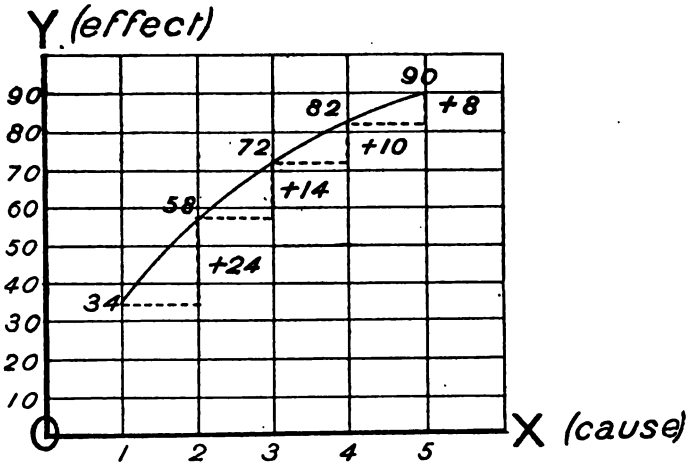


DIAGRAM 2.

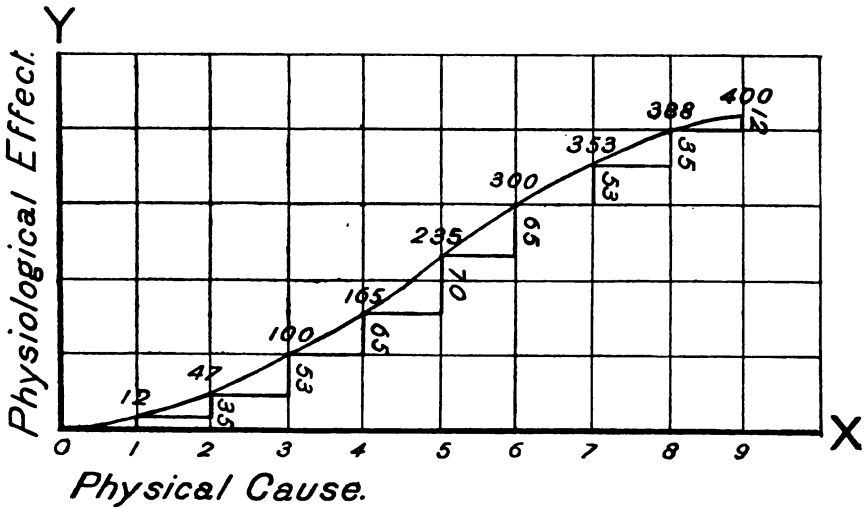


DIAGRAM 3.

which the cause was luminous stimulation and the effect an electrical response of the retina, the experiment being

conducted by a similar method to that before described, that is, the eyeball and optic nerve were excised and experimented upon in isolation from the rest of the body. The unit of stimulation is a candle of standard measurement at a distance of twenty feet, and the results representing the deflections of the galvanometer needle according to a relative standard. Our chief interest centres in the complete result. You will notice that in diagram 2 the curve is a concave curve to the abscissa, or base of the diagram, showing that with moderate stimulation equal increments of luminous stimulation produce diminishing increments of retinal change. This is in accordance with the already received law, and mentioned above, with regard to the production of sensation by stimulation, and also I would point out that with many drugs, although not so with all, the repetition or increase of the dose does not go on producing the same active effects, but effects which are evidence of the completely contrasted or paralysed condition of the functions affected, and the curve of the diagram is a representation of the gradation of those effects from greater to less. Again, let me remark as to objective and subjective symptoms, the retinal change as evinced by the galvanometer is the objective symptom of the disturbance in the retinal mechanism, whereas the sensation of light would be the subjective symptom of the same change, and Waller suggests, in view of the results of observations on both these aspects of the phenomena, that the symptom felt is the true arithmetical measure of the physiological state of the nerve matter which is its basis.

We find in this manner sketched out and diagrammatically represented a physiological law of reaction of the nervous system to stimuli presented to it, and assuming that the nervous system is accepted as an illustration of life exhibited in the entire organism, inferentially we have a law of reaction of life to the stimuli presented to it. In other words, the mode of correspondence of *B* to *A* on our symbolic diagram is characterised by a certain irregularity of response to a certain irregularity of stimulus. This law is expressed by Waller in these words: "Equal increments

of cause from minimal to maximal produce at first increasing increments of effect and subsequently decreasing increments of effect."

IV.—INFERENCES FOR THE LAW OF DOSE.

Now I may legitimately suggest that this law of response represents the normal response to stimuli as we experience them in daily life, but I want also to suggest that this law is not abrogated when the organism is subjected to extraordinary stimuli, such, for example, as the action of drugs. According to the characteristic qualities of the drug, physical and chemical, it acts upon different organs and with different degrees of effect on separate organs and with different degrees of reaction of the whole. In this manner the comparative knowledge of drugs as stimuli, comparative pathogenesis as we might say, is a very wide and comprehensive science. Some drugs act as minimal stimuli, some as maximal, in relatively the same dose. What can be the maximal or minimal dose of any drug for the production of any effect can only be ascertained by observation, information on which many of our provings afford. But if the law mentioned above is a law, what we should see if the effects of the drug could be graphically represented would be, not an alteration in the shape of the curve, but an alteration in its gradients. Dr. Waller calls the curve in diagram 3 a sigmoid curve. We cannot conceive of the curve of any drug having so slight a sigmoid character as is here represented, and the minimal and maximal degrees for each drug would no doubt vary as widely as possible. A glance at diagram 3 will make this point clear. The minimal stimulus (X) multiplied by successive steps up to number 5 produces on the (Y) scale an increasing series of effects up to that point, beyond that point the effects do not increase but decrease, until at at X 9 we only have an increase of 12 upon 8, while at 8 the increase is 35 upon 7, and at 7 53 upon 6, and at 65 of 6 upon 5. The numbers range thus from 1 to 9—12, 35, 53, 70, 65, 53, 35, 12.

Further, it must not be forgotten that a mere grouping of symptoms does not represent the entire response of the organism to the action of a drug. This can only be estimated by a survey of the entire drug picture from the effect of the minimal dose that will produce any effect to the effect of a maximal dose which may consist of so violent a reaction as to be a fatal issue. The response of the organism to a drug is the response to all the drug can do in or against the organism. But taken in its entirety we can never conceive it otherwise than that, if there is a general law governing the response to stimuli, the character of the response will be the same although differing in extent and degree in its different parts.

If we turn now to the relationship which this general conclusion bears to the administration of drugs in disease, we have to note first that it is upon a generalisation of the widest character we assume when we give a drug according to the rule *similia similibus curentur*. In accepting the totality of the morbid phenomena exhibited by the patient as the indication for a particular drug, we are assuming that the entire organism can react upon the drug and that on this ground the drug will act as a medicine and benefit the patient. When we see the good effect we say the patient is better. This statement may mean that an affected organ alone is recovering from its damaged function, but in the administration of the medicine the affected organ can never be considered apart from the general state of the entire organism or the whole group of organs and functions which constitute it.

I may presume then that the law of reaction we have been considering has from its very generality some bearing on the organism in a state of disease, and that this bearing will be intimately associated with what we seek to do with a drug when we give it in a case of disease according to our rule of practice. What do we expect the drug to do? We certainly do not wish to induce its pathogenetic effect. If we see these effects we at once assume that the patient has had too much of his medicine. In order to find the applicability of the law of reaction to the practical question of the

dosage of medicine, I must ask you to revert again to our diagram of symbols. In the state of disease our symbol *B* will not represent the organism as in health. It has undergone marked deviations from the normal or average in its character as an energetic system. The changes within it are plus in some directions and minus in others in the correspondence with *A*. It is difficult to conceive that such perturbations taken together are not evidence that a greater amount of energy is being evolved than in the normal. In other words, the organism is more active in a state of disease than in health. But it by no means follows that any of the laws of this normal action are thereby abrogated. Such a notion would destroy the logical foundations of science, and the experience of disease gives no warrant for the faintest suggestion of it. On the contrary, the evidence of increased action warrants the conclusion that, if such an expression may be allowed, these laws are more intense in their operation in morbid states than in health, that is to say, external changes are increased in the number of their manifestations and are produced with an increased velocity. This is what we mean when we say the organism is more sensitive in morbid states; its reactions to stimuli are quicker and more striking. If the perturbations of disease have not proceeded too far, so that the correspondence between *B* and *A* is not completely overcome by them, there is a tendency to its re-establishment of this correspondence. Such a tendency is called the *vis medicatrix naturæ*, and is part of the vital equation by comparison with the physical. The abnormal *B* tends to return to the normal *B*, and in many instances naturally returns without any special stimulus or fresh *X* from the outside. There are two points on the comparison of the abnormal *B* with the normal *B* which are of interest for our present subject. The physiological law of reaction to stimuli is operative in both. What is the difference between the curve (diagram 3) that would be produced in the abnormal compared with the normal, assuming the stimulus to be the same in each case? Clearly the earliest part of it will be omitted, the greatest amount of excitement will be exhibited with the minimal

stimulus, the upward part of the curve will be more direct, the concavity downwards will be much more marked, and the downward part of the curve will be more direct. The other point of interest is that, in a case of disease, the physician wishes to aid the tendency to a return to the normal. This he endeavours to do by means of the exhibition of an extraordinary stimulus in the nature of a drug. A stimulus, that is to say, which, as I have before pointed out, in the normal state will produce a curve of more striking gradients than the curve produced by ordinary stimulation.

Into the rationality of the rule of similars it is not my present intention to enquire—it is sufficient for us just now to know that it is valid as a rule of practice. In the light of the law of reaction of which I have been speaking, what is the probable dose which will best secure success under that rule?

We have before us, we will suppose, a case of disease, having a certain curve of reaction, shorter and more intense than the normal. We have also a drug capable of producing a curve of somewhat similar character in the healthy, and the knowledge that a certain dose of the one will favour the tendency of the abnormal curve to return to the normal curve of the other. What is the normal dose which will most quickly and certainly favour the tendency? Clearly, a dose below that required to produce the extraordinary curve of the drug in health, a minimal stimulus, so described when compared to the ordinary stimuli of health, which conclusion corroborates the invariable practice of our school. *Prima facie* on this argument the dose should be somewhere near the pathogenetic dose, but it may have to be much lower than that. I do not see that from the comparisons I have been making it at all follows in practice; if a review of the whole facts be taken into account, the dose must of necessity be close to the pathogenetic dose, but it must not equal it. There are so many other considerations to be taken into account which might oblige us to give a much smaller dose than that considered theoretically the correct one. Let me note (1) the activity of the particular drug;

(2) the nature of the disease and peculiar idiosyncrasies of the particular patient; (3) the strength of the *vis medicatrix naturæ*, as being all of unequal and varying character. These points I leave for your discussion as to their relative importance, but would merely add that they have to be weighed in relation to each other; in every case an application of either or all of them will naturally be tempered by the results of experience.

An admission of these considerations as applicable precludes the question of dosage from ever wholly being a question merely of high or low dilution of particular drugs, or in particular diseases, persons, or given by particular physicians. A high dilution may be admissible in one case and a low one in another. A low one in one case of another drug and a high one of another. These points must ever be decided in each case by the theoretical conclusions I have mentioned, qualified by the previous experience of each practitioner. The *sine qua non* for any dose is that it be below the pathogenetic dose, and for myself I would ever wish to remember that beyond this reservation the dose question ceases to be a question for dogmatism and becomes entirely practical. I have accomplished my purpose in this paper if I have shown in some slight degree that theoretically our practice as physicians is founded on the laws of life.

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- ³ "Prolegomena to a Philosophy of Medicine," 1896.
- ⁴ *Transactions of the Royal Society of Edinburgh*, 1873 (bound in vol. for 1876).
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- ⁶ "Text Book of Physiology." M. Foster. Vol. iv., 1900.

Dr. PERCY WILDE thought that we had too few papers on the subject, and perhaps because the question involved an enormous amount of knowledge of physiology, physics and chemistry before any distinct conclusion could be arrived at, and such great changes in our modes of thought had taken place during the last

twenty years. When he had written on the question he had argued a difference between physiological laws and physical laws. At the present moment it was not recognised that there was any difference between the physiological and physical energy—it was all physical. Vital reactions were looked upon as the result of physical changes in protoplasm. Taking the various stimuli, it did not matter whether they were chemical, physical or electrical, the reaction was always the same. If the optic nerve was stimulated by electricity or by friction, light was obtained; one did not get a result peculiar to the special stimulus applied. If the motor nerve was stimulated movement in the muscle was obtained, and it did not matter in the least what form of stimulus was applied. It seemed to him not difficult to follow the physiological reasoning used by Dr. Waller, because every nerve fibre did the same as a muscle. The muscle secreted a quantity of substance, called inulin, which, as the result of the nerve stimulus, underwent chemical changes comparable to explosions which appeared as muscular energy. In nerves a similar substance was stored up, the result of stimuli being to cause explosions or waves of motion in the nerve. Under such circumstances it was naturally possible that electrical currents should result. An electrical current produces a molecular change in iron which causes the iron to become a magnet. In the same way if the molecules in the body were influenced it seemed reasonable to suppose that an electrical current would be obtained. Protoplasm consisted chiefly of carbon, hydrogen, oxygen and nitrogen. Recently, in an investigation, he went through a list of four hundred drugs, and out of that number twenty-two contained the same elements as protoplasm, every one being a deadly poison. A food or a poison may be composed of the same elements, the result depended upon the physical arrangement of these elements. Hahnemann's law of dynamisation was the first recognition of the fact that it was the molecular state of the drug, not its weight, which determined its efficacy. It involved problems which the science of the present century might be expected to solve. He did not think it would be wise to throw away Hahnemann's law of dynamisation. He suggested that the members should put their heads together and endeavour to formulate a terminology in order that they might be able to express themselves properly on the subject. Electricity practically made no progress until 1870 because there was no terminology by which its phenomena could be made intelligible. Therapeutic workers at present were obliged to express themselves in terms which

were not only inexact but led to false habits of thought. Dr. Wilde concluded by thanking Dr. Goldsbrough for his very able and interesting paper.

Dr. MADDEN thought one point brought out by the experiments was that the double curve indicated the exhaustion of the vital reaction in resisting, and therefore preventing, the effect of the stimulation. In the first concave upwards there was a strong action of the organism to prevent the action of the drug. When it received a larger dose it could not react very much, and therefore less of the symptoms were obtained, the effect of all stimuli being, according to the right interpretation of Hahnemann's idea, the evidence of the resentment of the organism to the drug rather than its direct chemical or mechanical effect. Therefore a larger reactional result was obtained from a very small dose than from the same dose when it was added to the first dose. If the dividing line in respect to each drug and each patient could be obtained they would know where to draw the limit between the toxic and the therapeutic dose; but that was the difficulty. Patients varied as much as drugs, and no amount of mechanical experiments on divided nerves would enable them to determine the amount of a drug to be given to a particular patient.

Dr. BLACKLEY thought the author had succeeded in doing one thing, namely, in setting them all thinking. He was convinced that if homoeopaths were to maintain their position in the world of science they must begin at the beginning, and the sooner they set about it the better. Isolated nerves were all very well in their way, but they must go further back than that before the "bottom" of physiological action was arrived at. The only method which presented itself to physiologists nowadays was apparently to estimate results in terms of electricity. This shows a want of something, and we must evidently go further back and get physiological results in terms of protoplasmic reaction. The curves shown by the author indicated what had been known for a very long time, namely, that increase of dose did not necessarily produce results which proceeded in ordinary arithmetical progression; they also showed that there was a point when the effects were distinctly diminished although the amount of the stimulus was increased. He hoped Dr. Waller and those who were working in similar directions would not content themselves with recording the effects of ordinary mechanical or physical stimuli, but would be persuaded to try the effects of some of the drugs which were in daily use. "If this were done we should be

able to assimilate and utilise their teaching, but failing this we must set about the thing ourselves, and begin by first estimating the effects of stimuli or drugs upon protoplasm."

Dr. STONHAM said the author's curves proved, with regard to the time at which successive doses were given, that additional increments of stimuli were not accompanied by corresponding additional results. One would think that even the lower stimuli, if given sufficiently frequently, would follow the same law, and that the curves would bear upon the question of repetition of dose, which was as important almost as the quantity of dose. If doctors in practice constantly repeated doses, the drug became part of the environment of the organism, and the results ceased. He would like the author to say how frequently the doses were given.

Dr. GOLDSBROUGH said they were given at equal intervals of time.

Dr. STONHAM asked whether they were seconds, hours, or days.

Dr. GOLDSBROUGH replied he was not quite sure, but it did not matter as long as they were at equal intervals, and an interval was left for the special effect to pass off.

Dr. MACNISH hesitated to accept the theory explained by the author. He should be sorry to think that the analogy from physiological experiments held in homœopathy, because the fundamental difference between homœopathy and the other system was that of the personality of the subject. He thought that was the secret of their success, that each individual was treated as a distinct individuality, and that the drug had a distinct individual action on each patient. He thought that physiological or physical experiments would never prove anything with regard to the truth of homœopathy, because there was a vital force quite distinct from the physical process that went on. Hahnemann's theory still held sway, but numberless other theories had been promulgated, flourished and passed away during the interval. He believed in the old dictum "When you obtain any practical fact in therapeutics, wire it to your comrades; when you get any theory, keep it."

Dr. ROBERSON DAY (in the Chair) thought that drug dosing would never be reduced to mathematical precision. All attempts, no matter how attractive, must necessarily prove a failure on account of the ever present and ever varying constitution of the patient. While the paper had puzzled most of them and passed their understanding, he was sure the members desired to convey a hearty vote of thanks to the author for such an interesting and suggestive contribution to their proceedings.

Dr. GOLDSBROUGH, in reply, in dealing with the difference between physical and physiological effects, said that all physiological effects were in physical terms and in physical phenomena, but all physiological action was not exclusively physical action. That was the point of difference between Dr. Wilde and himself. That was why the subject matter symbolised by *A* differed from *B*. To go further, physiological action, as distinct from physiological effects, could not be expressed in any sense of the word in physical terms; it must be expressed by inference or a statement of some kind pertaining to itself. Physiologists had as yet refused to see that point. The burden of his inference from the experiments cited was that in a nerve there was a representative of life as distinct from any other tissue of the body, and that he believed would come to be regarded as a conclusion by-and-bye. The experiments had been going on for many years; results that could not be held had been carefully eliminated, while results on definite points were being established. He simply wished in reading the paper to suggest a corroboration of their practice, he did not wish to prove anything, simply to give the members something to think about and to say whether they were on the right lines physiologically in giving a small dose. In reply to Dr. Stonham, he (Dr. Goldsbrough) could not see what difference intervals of time made, provided the intervals were all equal, and the results noted. In giving doses we tried to come to something like an equal interval of time, but any conclusion regarding time could only be based on a large number of experiments, made with different intervals, not different intervals in one experiment, but different intervals in different experiments, which of course involves a very much wider field of observation. Dr. McNish had mistaken the point he (Dr. Goldsbrough) wished to bring forward, which was a corroboration of the dose practised as on physiological lines.

CLINICAL EVENING: LIVERPOOL BRANCH.

A CLINICAL Evening was held at the Hahnemann Hospital, Liverpool, on April 11, 1901, when the following cases of disease of the nervous system were exhibited:—(1) Post-Influenzal Neurasthenia, by Dr. Cash Reed; (2) Facial paralysis, by Dr. E. Lucas Hughes; and (3) Peripheral Neuritis, by Dr. James Watson.

(1) *Post-Influenzal Neurasthenia.*

The patient, a man aged 38, sent by Dr. Abbott of Wigan, complained of "agitation all over," that "he can't keep still," and that "his hands tremble." When seen some weeks before admission these symptoms were perfectly obvious to the observer, especially pulsation in the neck, and that also in the abdomen. Moreover, when asked to write the hand made a variety of rapid and inconsequent jerks, especially at the outset. The *history* of the case was to the effect that nine years ago he first became conscious of the above condition, but recovered, and three years ago he had influenza, which lighted up all the old trouble.

On a careful examination of the case, the symptoms seemed to range themselves chiefly under two groups, viz., (1) nervous, and (2) cardio-vascular. With regard to the *first*: when asked to touch tip of nose with finger, the eyes being closed, he was able to accomplish this fairly well. The "intention" tremor when he *writes*, however, has been referred to. His speech is rather slow in its initiation and there is some hesitancy in utterance. Such were the chief *positive* signs. The *cardio-vascular* symptoms consisted in slight inequality of the radial pulses, tachycardia, and the pulsation of abdominal aorta already alluded to. Moreover he had a systolic aortic murmur, heard also posteriorly (pointed out by Dr. John Hayward), and considerable pain in dorsal spine.

The *diagnosis* was somewhat puzzling, especially as regards the question of aneurism, which, as Dr. Abbott pointed out with much reason, was not improbable.

In a word the diagnosis chiefly comprised the consideration of (1) aneurism, (2) insular sclerosis of cord, (3) commencing "G. P.," (4) metallic poisoning, (5) alcoholism, (6) Graves' disease, (7) hysteria, (8) post-influenzal neuritis.

As to the first the opinion of members was asked. As to the second the points for consideration were several, but chiefly that the patient was past the usual age (20-30) for this. It is commoner in women than men. He had passed his life mostly under no specially depressing surroundings. He is in the employ, as a clerk, of the L. & N. W. Ry. Co., and it is well to mention that he had *not* had syphilis, though this point, if it have any bias, is rather in favour than otherwise of the disseminated sclerosis under consideration. There is no ankle clonus, the knee-jerk is satisfactory, and there is no nystagmus. As regards *Graves' disease* it was observed that there was no exophthalmos or mental symptoms, though the tremor and tachycardia were obvious. As regards the seventh and eighth the speaker inclined to regard the case as essentially the latter with some elements of the former.

Prognosis he thought good.

Treatment consisted in iodine, oxalic acid and glonoin, and thymus gland was suggested.

(Subsequently the patient greatly improved, gaining considerable weight and losing the obvious symptoms, and finally he left for the Convalescent Home.)

Dr. John D. Hayward, having previously seen the case, agreed with Dr. Cash Reed's diagnosis as to post-influenzal neuritis, and thought there was a marked hysterical or neurasthenic element in the condition present. He thought the rest in hospital had improved many of the symptoms; the general pulsation and the cardiac murmur were much less marked. He added that the hospital surgeon who had previously examined the case had reported a diagnosis of aortic aneurism, but of this there seemed few indications, and the pulse tracings taken by Dr. Cash Reed did not support this suspicion.

(2) *Facial Paralysis.*

Carrie McC., aged 7 years. Child was a perfectly healthy baby when born, large and well developed. The mother had had a very tedious confinement, and suffered subsequently with a lacerated cervix, but the labour had not been instrumental. It was a vertex presentation. Two months before delivery the mother had had a severe fright. When the child was 10 months old the right side of the face was found to be paralysed. The mother does not remember the child having been exposed to cold and cannot attribute any reason for the paralysis. This paralysis has continued ever since. On July 9 last year, when the child

was 6 years of age, she had scarlet fever, and was in the Netherfield Road Fever Hospital eight and a half weeks. Four years ago she had been laid up in bed with pneumonia for three weeks, attended by a local allopathic doctor. No other illnesses. Since the scarlet fever the facial paralysis has been worse. When she came out of the hospital she seemed dazed and silly for about a month. She was vaccinated when 6 or 7 weeks old, and again when she was in the fever hospital. She is very susceptible to cold—the least little draught will give her one. When she is in bed her whole body trembles. As a child she always wanted to be carried, and always objected to being touched; she has objected and does still object. She has always shown a great tendency to start at the slightest thing, is irritable and bad humoured. Her face becomes puffy at times, and she gets very pale.

On examination there is paresis of the right orbicularis palpebrarum, and complete paralysis of the right lower half of the face. The fundus oculi is apparently healthy. The child is very hypermetropic and the right eye is astigmatic. She has been given causticum 3 for about a month with no effect. Electricity was advised, and of course the errors of refraction have been corrected with suitable spectacles.

(3) *Peripheral Neuritis.*

This patient, a woman aged 33, was admitted to hospital on April 11. A week previous to her admission she was in active service as cook in a large London establishment. On admission the patient was found to have lost practically all power in the lower extremities, and at the same time she complained of pains in the muscles of the calves, which were very sensitive to pressure, as well as of pins and needles sensations in the feet, both on the dorsal and plantar aspects. She was quite unable to move about the room, and it was with great difficulty, and only by support from furniture, that she could raise herself into the erect posture. Her facial expression indicated most marked mental depression, almost approaching in character the stupor of some forms of insanity. The orbicularis palpebrarum of the left eye was paralysed and the pupil of that side was larger than its fellow and reacted very slowly both to light and distance. The grasping powers of the hands, especially that of the left, was decidedly impaired.

There was a marked alcoholic history; no record of symptoms pointing to syphilis was obtainable.

Dr. Watson expressed the opinion that the case was one of very rapid and acute peripheral neuritis, probably of alcoholic and it might be of arsenical origin, though there was none of the pigmentation of the skin which the arsenical neuritis usually gives rise to.

An interesting discussion upon some of the anomalous symptoms of the case took place.

CLINICAL EVENING: ANNUAL ASSEMBLY.¹

SYNOPSIS OF CASES EXHIBITED.

*Cerebral Apoplexy followed by Hemiplegia, in a child aged 6 months.*²

Till February 7, 1901, this patient was a perfectly normal child. She then had a fit in the night and was unconscious four days. The left side was completely paralysed, face, arm and leg. There is post-hemiplegic contraction at the knee where the hamstring tendons are felt very tense, also in the left hand and elbow.

Her mental state as far as can be estimated is not so bright as formerly.

Treatment.—Secale 30.

*Case of Hydrocephalus, aged 6 months.*²

When two months old this child had convulsions, since then the head has enlarged and now measures $20\frac{1}{2}$ inches in circumference. Has been taking helleborus 3, now taking infus. apocynum m xx . bis die.

*Case of Talipes Equino-Varus associated with Rachitis, aged 2 years.*²

This case was typical in form and was taking calc. carb. 6.

*Tabes Dorsalis with Disordered Taste.*³

H. Y., 51, male. Syphilis as a young man, malaria and cholera in South America. Present illness began one and a

¹ A Clinical Evening was conducted on July 2, 1901, by the Section of Surgery and Gynecology. Secretary, Dr. E. A. Neatby.

² Cases shown by Dr. ROBERSON DAY. ³ Exhibited by Dr. GOLDSBROUGH.

half years ago with pain in the forehead and a feeling of swelling in the mouth, then sharp shooting pains in the legs. Present condition that of locomotor ataxia. Articulation indistinct, feeling of numbness on right side of mouth, with loss of taste on right side of the tongue. Argyll-Robertson pupils. Some motor loss of right side of face and of both hands and legs. Cannot stand steadily with heels together, or stand or walk with eyes shut. Knee-jerks absent. Under treatment as out-patient with aluminium 30 for three months, with some little improvement.

Primary Lateral Spinal Sclerosis.¹

S. P., 34, male, clerk. Affected three years. Syphilis nine years ago. Present condition began with lassitude and tendency to fall backwards. He would catch his heel on a step or an incline. The gait is now slightly ataxic when eyes are closed and spastic in ordinary walking. The knee-jerks are exaggerated, plantar reflex weak on the right side. Nervous deafness on both sides. Under treatment as out-patient with plumbum met. in various dilutions, and lately lathyrus 12.

Fibroid Tumour of the Uterus.²

This case of uterine fibroid with copious hæmorrhage was shown in conjunction and comparison with the ensuing instance of non-hæmorrhagic fibroid. The present patient, aged 36, had been married three years, but with no family. For five years has been under treatment for irregular and profuse menstruation. The period now lasts the greater part of a fortnight, is drenching, and large clots are passed. There is no inter-menstrual bleeding.

Examination shows a multinodular fibroid rising out of the pelvis and apparently about the size of a cocoanut.

The chief stress, as is usual in these cases of hæmorrhagic fibroid, is on the cardio-vascular structure. The pulse alters its rhythm at every fourth beat, with a tendency to intermission. The blood pressure—measured by Hill's sphygmometer—is relatively high = 186 c.g. There is a well-marked systolic murmur over the pulmonary area; the apex beat is found in the sixth interspace. For these facts we are indebted to Dr. Byres Moir.

The cardiac condition was judged insufficiently stable to bear at present the stress of operation. A further time was assigned

¹ Exhibited by Dr. GOLDSBROUGH.

² Exhibited by Dr. BURFORD.

for measures specifically devoted to increasing the vigour of the circulatory organs prior to hysterectomy.

*Non-hæmorrhagic Uterine Fibroid; Secondary Amenorrhœa.*¹

This patient was shown at the same time as contrasting, in important features, with the foregoing. She was 28 years of age, married three years ago, but had been a widow for a few months. Had never conceived. Since her husband's death had been much depressed.

A year ago the periods became more frequent, often with a clear interval of only ten days; but since her husband's death there had been amenorrhœa, with the exception of a single moderate period four weeks ago.

Examination showed a hard, mobile tumour of the uterus, rising out of the pelvis to within two fingers' breadth of the umbilicus. The cervix was pushed forward and downward.

In this case there were no cardio-vascular aberrations whatever; and other than depressed spirits, some back-ache and an increased frequency of micturition, there were no symptoms calling for special attention.

The patient was referred to the medical attendant for further observation.

*Sub-mucous and Interstitial Myomata.*²

A. J., aged 39, has suffered from menorrhagia over two years, progressively increasing for three months. No inter-menstrual hæmorrhage.

A tumour extends out of pelvis up to $2\frac{1}{2}$ inches from umbilicus in middle line, and higher on the right side. The cervix uteri is small. The tumour fills and bulges downwards in the anterior fornix, pressing on the neck of the bladder. The tumour is nodular and not tender. The cavity measures $4\frac{1}{2}$ inches, the sound being deflected as it passes; the concavity looks forward.

Heart.—Apex beat displaced down and out; impulse diffuse and forcible; mitral sounds pure; systolic murmurs at base.

*Multiple Myomata, chiefly Sub-peritoneal.*²

Patient, aged 44, first seen in 1896 on account of menorrhagia and large abdominal tumour. Tumour has slowly increased for four and a half years; has been noticed nearly twenty. The whole mass is abdominal; cervix is lacerated.

¹ Exhibited by Dr. BURFORD.

² Exhibited by Dr. NEATBY.

When she first came the heart was normal. Now there is a mitral bruit and the beat is pushed up, and there is tightness across chest and shortness of breath. There is still menorrhagia, and now coloured discharge almost constantly.

*Lupus of Nose Treated successfully by Sunlight.*¹

A girl aged 16 had been under treatment for some years, both at several London Hospitals and in Bromley, with little or no relief. During the summer of 1900 she was treated by sunlight with very great success. It was applied in the following manner: The patient lay on a deck chair out of doors, and the nurse held a common flask, six inches in diameter, filled with water tinted blue (sky blue) with sulphate of copper, so that the rays of the sun were focussed on to the affected part. This treatment was carried out for twenty minutes for three months, by which time all the swelling had subsided and the ulceration healed. Since she has had the sittings occasionally, as some small patches inside the nose which are difficult to get at are not quite well.

*A Lantern Demonstration of Photomicrographs and Drawings was given to illustrate the "Life History and Role of the Malarial Parasite."*²

Synopsis.—A typical malarial parasite (benign tertian), development in red corpuscles (Laveran), sporulation (Golgi), an asexual process, phases coincident with clinical phenomena, endogenous cycle, its meaning; malignant parasite, its asexual development, transference to mosquito, exogenous or sexual cycle, crescent bodies, hyaline and granular spheres, the flagellated body—its destiny—Manson's deductions verified—fertilisation in stomach of mosquito (Ross), the vermicle encystment in coat of stomach of mosquito, formation of sporozoites (Grassi), corroborative observations on halteridium of sparrows (McCallum), migration of sporozoites from body cavity to veno-salivary glands of mosquito—inoculation into man, completion of exogenous or sexual cycle; mosquitos, the definite host, different varieties, anopheles, culex, their distinctions; complete proof of mosquito-malarial theory, inoculation experiments, protective experiments; varieties of parasites, their corresponding fevers; action of quinine on the parasites and on fever; practical outcome of the discovery.

¹ Exhibited by Mr. H. WYNNE THOMAS.

² Exhibited by Mr. JAMES JOHNSTON, M.B., F.R.C.S.

SPECIMENS EXHIBITED AT VARIOUS
MEETINGS.

*Myoma of Uterus.*¹

This specimen was a growing myoma in the cavity of the uterus with the embryo.

*Ovarian Tumour.*¹

A large malignant ovarian tumour removed from a patient by Dr. Neatby.

*Small Renal Calculus causing Pyonephrosis, removed by
Nephrolithotomy.*²

A stone, weighing 38 grains, removed from right kidney of Mrs. W. She was admitted with a tense rounded swelling in the right hypogastric region reaching as far as the middle line of the abdomen and down to a line drawn from the anterior superior spine to the umbilicus. The resistance extended into the loin. The urine contained a large deposit of pus. She had evening temperature from 100° to 101°. At the operation the kidney was found to be large and soft from cystic degeneration in places. One of the fluctuating areas was incised and 6 ounces of thick creamy pus evacuated. The kidney was explored by the finger and the stone found at the antral end of the pelvis. After operation the temperature became normal, pus in the urine diminished, and she was discharged cured three weeks later.

*Renal Calculus—weight 2½ ounces.*³

This calculus was removed by Mr. C. Knox Shaw from a woman, aged 33, at the Phillips Hospital, Bromley, under care of Mr. H. Wynne Thomas. Towards end of 1899 patient passed a small stone during micturition; during next three months passed in all about twelve, sometimes with severe pain, none since. First seen in March, 1901, complaining of aching pain in right side of abdomen. Examination showed large smooth swelling slightly tender to pressure. The urine contained a quantity of pus. On April 12, under ether, the stone was removed. On April 24 the

¹ Exhibited by Dr. E. A. NEATBY, October 4, 1900.

² Exhibited by Mr. KNOX SHAW, June 6, 1901.

³ Shown June 6, 1901.

discharge from the wound had almost stopped and the patient sat up out of bed. On May 13 the wound had quite healed and she went to Folkestone. A smooth swelling could still be made out in abdomen, though much smaller.

*Carcinoma of Cervix Uteri.*¹

In this specimen the uterus was removed by vaginal hysterectomy for incipient carcinoma of the cervix. Recovery. Microscopic section shown.

*Carcinoma of Cervix with adherent Placenta.*²

In this case the uterus had been removed by the same method and the adherent placenta was shown in the cavity. Recovery. Microscopic section also shown.

*Tubal Mole.*³

A Fallopian tube and tubal mole from a case of extrauterine pregnancy, in which rupture had taken place into the broad ligament, forming an enormous hæmatoma. Recovery.

*Hæmato-Salpinx.*¹

A Fallopian tube in a case of extrauterine pregnancy, and a large encapsuled clot from the pelvis, caused by hæmorrhage from the enclosed tube. Recovery.

Cystic Appendix Cæci.

This specimen was removed from a man, aged 39, who had suffered for some months from right iliac pain but no serious attack of "appendicitis." Usually these cases give rise to no symptoms, and are found *post mortem*. There had been some inflammation and the appendix was adherent to the abdominal wall. It was enormously distended, bigger than a large thumb, and contained about 3 drachms of clear mucus, and bodies like large sago-grains. There was a stricture at its proximal end.

¹ Exhibited by Dr. NEATBY, July 3, 1901.

² Exhibited by Dr. NEATBY and Mr. F. SHAW, July 3, 1901.

³ Exhibited by Dr. NEATBY and Mr. TINDALL, R.N.

⁴ Shown by Dr. MADDEN and Mr. KNOX SHAW, July 3, 1901.

*Temperature Chart from a Case of Epidemic Influenza
in a Child aged 2 years and 2 months.¹*

The following are the notes of the case:—April 12, 1901. Margaret S., taken suddenly ill with temperature 102°. Next day rose to 105°, and the following day reached the highest point 106·2°. It then gradually fell to normal on April 18, but this was soon followed by a relapse, the temperature reaching 102° on April 22, and eventually the normal was reached (after subnormal oscillations) on May 5.

During the height of the fever packs were most successful in reducing temperature. Acon. 3x, bell. 3x, gels. 1x, bapt. 1x were all helpful.

Nutrient enemata supported the strength of the patient at a critical time when the stomach refused to retain nourishment.

Cardiac depression was very marked, and attacks of syncope frequent. Pulse irregular. Arsen. a. 3x, and later strophanthus, were of great value here.

Marked anaemia supervened rapidly and was treated with china and fer. protoxalate.

A change of air was followed by complete restoration to health.

*Photograph of Sarcoma of Upper Jaw in a Boy aged
5 years.²*

S. B. H. was born June 13, 1895, and died May 4, 1901. The photograph was taken February 24, 1901, when the growth had been noticed six weeks.

February 23, 1901. Patient first seen by Dr. Epps, when Mr. Dudley Wright confirmed the diagnosis and advised no operation.

Brief history given by the father of the boy: Six weeks previously a swelling appeared at the angle of right upper jaw, which was diagnosed as an abscess, was lanced three times and tooth removed. In a short time a hard substance projected through the tooth-socket, which was thought by the attending doctor to be a piece of bone, but which on removal proved to be a hard jelly-like substance.

April 29, 1901, father reported: The tumour is enormous, quite closing the eye and completely filling the mouth cavity, so that the boy can only swallow drops of fluid.

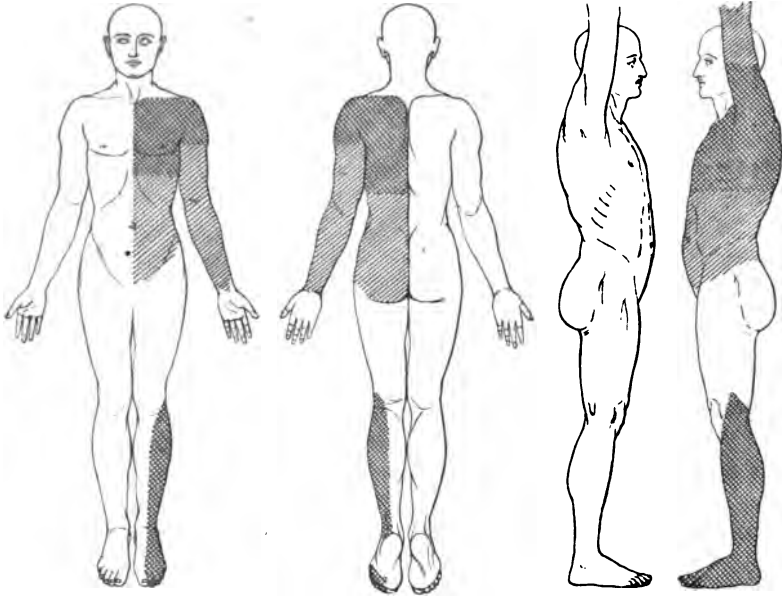
Period of growth fifteen weeks.

¹ Exhibited by Dr. ROBERSON DAY, July 8, 1901.

² Exhibited by Dr. WASHINGTON EPPS, July 8, 1901.

*Patches of Gangrene and Anæsthesia in Syringomyelia.*¹

These conditions were shown in a water-colour drawing and diagram, the latter reproduced. The following are the notes of the case:—



■ = Complete Anæsthesia
 ▨ = Partial " "

J. B., aged 22, single, housemaid.

Previous history.—Rheumatism, aged 10.

Family history.—One sister has phthisis, another has had rheumatic fever eight times; four brothers healthy.

History of present condition.—Three years ago was laid up in bed for nine weeks with pain and swelling of the left hip, knee and shoulder joints, the right side of the body being unaffected. This came on slowly and was preceded by a feeling of weakness in the left leg. After this patient seems to have been well until March, 1900, when, following a slight scald of the back of the hand, several superficially ulcerated areas formed on the hand and extensor surface of the arm. These refused to heal under treatment at Guy's Hospital, and afterwards at the Leaf Cottage

¹ Exhibited by Dr. WASHINGTON EPPS, July 3, 1901.

Hospital, Eastbourne, and in July of the same year similar patches appeared on the extensor surface of the left leg.

On December 10, 1900, patient was admitted to the London Homœopathic Hospital and her condition then was as follows :—

On the extensor and lateral aspects of the left leg and lower third of left thigh are numerous ulcerated areas of varying size, and in various stages of healing. Similar areas exist on the back of the left hand and extensor surface of left forearm. Sensation is affected as follows :—

There is complete loss of tactile, painful and thermic sensation over the outer surface of the left leg and lower third of left thigh, the area including the three outer toes and the outer part of the sole. In the arm a similar area exists in the middle of the flexor aspect of the forearm—tactile sensation is impaired, but not absent over the rest of the flexor aspect. There is defective tactile sensation all over the left side of the chest and abdomen, with complete anæsthesia over an area extending from the left supraspinous fossa down to the seventh rib. About one inch below the twelfth rib, on either side, is a band of hyperæsthesia. *Pain* is complained of mostly in the left shoulder and the left ankle and leg. *Reflexes.*—*Left.* Increase of both superficial and deep reflexes in leg. Abdominal and epigastric reflexes normal. *Right.* Reflexes normal.

By the middle of February all the ulcerated areas had healed up and the patient's general health had much improved, and she got up daily. Towards the end of March the places on the arm and leg broke down again, and for a time were as bad as formerly. Latterly there has been some improvement. The arm is now quite healed, and only two or three places on the leg are discharging.

Patient has suffered constantly on and off with severe headaches. *Catamenia* rather irregular. The interval varies from three to five weeks.

About the middle of May last patient began to suffer from retention of urine, which has continued on and off up till the present. After the urine has been drawn off there is often incontinence during the next twelve hours, when the control of the sphincter is regained. The urine usually contains a trace of albumen. *The bowels* are always constipated and action obtained only by the use of enemas. The general health of the patient has continued good, her appetite is fair and there has not been loss of flesh or strength. She sleeps well except when disturbed by headache.

Treatment.—Ars. alb. 6, three weeks (gels. 1x, three days);

plumb. 6, one week; ign. 3x, eleven days; nux. vom. 1x, two weeks (graph. 12, three days); plumb. acet. 3x, two weeks; phos. 6, four days; (ign. 6, three days); phos. 5x, two weeks; sulph. 12, two weeks; bell. 1x, two weeks; silica 30, six weeks; naja 3, two weeks, alternated with silica; bell. 1x, four weeks, alternated with silica.

*A Retractor.*¹

This instrument was a self-retaining retractor, designed by Mr. H. Wynne Thomas.

*The Nitze-Albarran Uretero-Cystoscope.*²

This instrument was exhibited with a demonstration of its use on the dummy.

*Uterine Fibroid.*³

A uterine fibroid removed by the retroperitoneal method from a patient aged 46. Heart complication. Recovery.

*Uterine Fibroid.*³

A uterine fibroid, with adherent and diseased appendages, removed from a patient aged 39. Recovery.

*Uterine Fibroid.*³

A uterine fibroid removed from a single lady, aged 48. Recovery.

*Ovarian Cyst.*³

A strangulated ovarian cyst removed from a single woman, aged 26. Recovery.

*Ovarian Cyst.*³

A strangulated ovarian cyst, with numerous and dense adhesions, removed from a married woman, aged 32. Recovery.

*Carcinoma Uteri.*³

A uterus, with cancerous cervix, removed from a married woman by vaginal hysterectomy. Recovery.

*Carcinoma Uteri.*³

A uterus, with cancerous cervix, removed by vaginal hysterectomy from a married woman; there had been very free hæmorrhage. Recovery.

¹ Exhibited by Mr. H. WYNNE THOMAS, July 3, 1901.

² Exhibited by Dr. NEATBY, July 3, 1901.

³ Exhibited by Dr. BURFORD, July 4, 1901.

REPORT OF THE COUNCIL : SESSION 1900-1901.

THE Council feel that although the Session 1900-1901 has no striking features to record, yet it has been one of continued prosperity. The papers read, and the discussions and attendances, have been up to the average.

Three members have resigned, five have died, and four new members have joined the Society. The losses by death have been :—Chas. H. Blackley (Manchester), elected 1871 ; C. W. Kitching (Cape Town), elected 1875 ; J. C. Burnett (London), elected 1879 ; T. C. Marsh (London), elected 1885 ; E. R. B. Reynolds (Highgate), elected 1893.

In the early part of the Session the *Materia Medica* Committee reported that they could not recommend the continuance of the effort to publish a new *Materia Medica*, a decision the Council reluctantly feel they must advise the Society to adopt.

The Indexing Committee have arrived at an important stage of their proceedings, and the Council hope very shortly to present to the Society some of the fruits of this Committee's very arduous and self-sacrificing labour. The Council have had under careful consideration the question of improving the Journal of the Society, and are taking steps to render the new volume of the Journal of greater value to members.

Finally, the Council believe the proposed alterations of the laws, which are to be considered at the Annual Assembly, will extend the sphere of influence and usefulness of the Society.

THE BRITISH HOMOEOPATHIC SOCIETY.

BALANCE SHEET SESSION 1890 1891.

RECEIPTS.
 To Dividends on 2½ per cent. Consols £ 4. 4.
 " Subscriptions " 5 4 0
 " Sale of Publications " 217 7 0
 " Half cost of Plates " 12 5 2
 " Advertisements " 0 6 8
 " Fellowship Fees " 55 0 0
 " Donation " 7 7 0
 " 0 10 0

EXPENDITURE.

By Balance due to Bank £ 0. 4.
 " Rent " 0 4 4
 " Printing " 46 0 0
 " Reporting " 16 10 0
 " Honourarium to Editor " 10 10 0
 " Library " 10 0 4
 " Refreshments " 6 10 0
 " Cheques returned " 2 2 0
 " Petty Cash " 2 10 0
 " Balance £264 0 0

£287 10 11

T. G. STONEHAM, Auditor,

JNO. G. BLACKLEY, Treasurer.
 JULY 1, 1891.

SOCIETY NEWS.**ALTERATION OF LAWS.—ADMISSION OF INDIAN AND COLONIAL PRACTITIONERS.**

At the Annual Assembly a number of important alterations in the Laws were made on the initiative of the Council. These had become necessary, partly because the advance of time had rendered some of the old laws obsolete, and partly from the desire to broaden the basis of the Society so that Indian and Colonial practitioners might enter its membership. Under the new laws a condition of membership on the part of Indian and Colonial practitioners is that previous to election individual qualifications are found satisfactory to the Council. It is hoped that many practitioners residing in India and the Colonies will avail themselves of the opportunity of cementing the tie by which a common method of practice binds them to practitioners in Great Britain by joining the Society. A copy of the Laws as amended is included in this number of the Journal.

NEW MEMBER.

At the Annual Assembly, July 3, 1901, Nathaniel Grace, M.D., C.M., McGill Univ., Toronto, M.R.C.S., L.R.C.P.Lond., 2, Calverley Mount, Tunbridge Wells, was elected member of the Society.

ELECTION OF OFFICERS, 1901-1902.

President : Dr. George Burford.

Vice-Presidents : Dr. J. Roberson Day, Dr. Herbert Nankivell.

Treasurer : Dr. J. G. Blackley.

Council : the above and (*Fellows*) Drs. Byres Moir, Goldsbrough, McNish, and Madden; (*Members*) Drs. Lestock Reid and Stonham.

SECTIONAL COMMITTEES.

Materia Medica and Therapeutics : Drs. Black (Torquay), Hughes, Lambert, McLachlan (Oxford), and Wilde (Bath).

General Medicine and Pathology: Drs. Hervey Bodman (Bristol), Ellis (Liverpool), Goldsbrough, McNish, Byres Moir.

Surgery and Gynaecology: Drs. Burford, Johnston and Neatby, Messrs. Thomas (Bromley) and Dudley Wright.

LIVERPOOL BRANCH.

OFFICERS FOR 1901-1902.

President: Dr. A. E. Hawkes.

Vice-President: Dr. Cash Reed.

Hon. Secretary and Treasurer: Dr. Watson.

Representative on Council: Dr. Hawkes.

SUMMARY OF PHARMACODYNAMICS AND THERAPEUTICS.

“GATHER UP THE FRAGMENTS, THAT NOTHING BE LOST.”

JUNE—AUGUST, 1901.

PHARMACODYNAMICS.

Antitoxin.—Dr. Goodno contributes a paper to the *Hahnemannian Monthly* of June in which he speaks warmly of the power of antitoxin over diphtheria. He has treated 217 cases and only lost nine. He pleads for a more concentrated serum and more persistent administration.

In the same journal for August we read of an experience of over 2,000 cases in the Boston City Hospital, where a mortality formerly of 45·2 has been gradually reduced to 12·23 per cent. [How murderous must the prior treatment have been!—ED.]

Arsenic.—Lassar, whose favourable results with arsenic in cancer we have already noted,¹ has this year communicated further experience in this direction. Two epitheliomata have in his hands completely disappeared under the influence of the “*pilulæ Asiaticæ*,” of which arsenic is the active ingredient. Of the three cases reported by him in 1893 all have remained free from recurrence.—*Charlotte Med. Journal*, July, p. 81.

Aurum.—Dr. Younan contributes an illustration of the influence of gold on the testicles in boys confirmatory of Dr. Burnett's recommendation. The organs were still undescended at 12, and their owner was more girlish than he should be. The cure, which was decided, was effected with drop doses of a first centesimal solution of the chloride of gold and sodium.—*Calcutta Journ. of Med.*, December, 1900.

¹ See vol. i., p. 276.

Echinacea.—Dr. C. B. Kinyon has essayed the antiseptic internal action of this drug in puerperal infections, and has seen great benefit from teaspoonful doses of a solution of a drachm of the tincture in four ounces of water, repeated every hour "till the symptoms of putrid intoxication are controlled."—*Hom. Journ. of Obstetrics, &c.*, May, p. 218.

Dr. T. Arthur Bullard, after three years' experience with this remedy, propounds it as almost specific for appendicitis. The 1x has been his usual potency.—*Amer. Homœopathist*, July 1, p. 203.

Hepar sulphuris.—Dr. Selfridge considers a feeling as if the wind were blowing on some part of the body an infallible indication for hepar, and relates cases of pyelitis and asthma cured by it when so selected.—*Pacific Coast Journ. of Hom.*, June, p. 161.

Dr. F. F. Laird considers hepar and naphthalin his sheet-anchors in the treatment of hay-fever, the former covering more cases than the latter.—*Ibid.*, April.

Iodoform.—After enumerating some of the incidental results of iodoform applications, Dr. J. C. Wood concludes: "Several additional cases of iodoform poisoning have come to my notice, so that I have practically abandoned the agent as a surgical dressing in any form, and, I believe, much to my patients' benefit, as well as to their comfort."¹—*Hahn. Monthly*, August, p. 488.

Ipecacuanha.—This drug has been commended in the morphia habit.² An interesting case of the kind is reported in *L'Art Medical* of July (p. 38), where it was of signal service.

Mercury.—"Cabot states positively that mercury, given in the early stage of syphilis, will cause the polymorphonuclear forms of the white blood cells to gradually increase towards normal. In parenthesis he adds: 'Mercury given to healthy individuals has just the opposite effect; the lymphocytes being increased at the expense of the polymorphonuclear forms.'"—*Medical Century*, July, p. 214.

Opium.—Dr. Chandrasekhar Kali adduces copious evidence of the influence of homœopathic medication upon opium-eaters, although their use of the narcotic is not disallowed, and is even urged.—*Calcutta Journal of Medicine*, February.

¹ Dr. Wood, later on in his article, makes similar remarks as to the applications of corrosive sublimate so much in vogue in antiseptic surgery.

² See *Monthly Hom. Review*, vol. xxii., p. 280.

Phytolacca.—Two cases of poisoning by this plant have recently appeared, one in the *American Homœopathist* of July 15, and the other in the *North American Journal of Homœopathy* for the same month (p. 61 of appendix). The symptoms in the former, arising from eating the fresh root by mistake for horse-radish, were those of local irritation only. In the second the juice had been taken in tablet form for corpulence. After some days the patient noticed a sore throat, particularly in the tonsils. There was actual swelling in the right. This condition disappeared, and a feeling of lightness and well-being followed. Later this passed into a state of indifference, a mental laziness and desire to rest. Then came a bruised feeling in the upper arm, where the flesh became discoloured and a large abscess seemed imminent. But it passed off, and there followed an enormous indurated, œdematous, bluish swelling on the outer surface of the left leg. This was accompanied by bone pains of both tibiæ, worse at night. Weight decreased by twenty pounds.

Pulsatilla.—Dr. Claude finds this remedy preferable to any other in headaches from over-work; and Dr. Parenteau has ascertained that in such cases the veins of the fundus oculi are greatly enlarged in calibre. Dr. Claude finds the mother-tincture aggravate, and the attenuations best made to mount gradually higher.—*Revue hom. Française*, July.

Rhus.—"There is a class of cases in which I wish specially to emphasise the value of rhus, namely, in old injured eyes. We all meet cases in which an eye has been injured, months or years previously, either by blow, puncture, accidental or operative cuts, perforating ulcer, &c., in which the sight may be partially or wholly destroyed, and which at times become inflamed, painful, and sensitive to pressure or motion. The conjunctival vessels are engorged, together with circumscribed corneal injection, lachrymation, with or without photophobia. In such cases rhus is a most valuable remedy, and seldom fails to relieve."—Hinson, *Medical Era*, July, p. 155.

Rhus aromatica has hitherto achieved its successes in enuresis nocturna in tincture substantial doses only. Dr. Choud-bury administers it in globules saturated with this preparation, giving only one at a time.—*Hahn. Monthly*, June, p. 412.

Strychnine.—There has been great abuse of late of this potent alkaloid as a "tonic," and it is satisfactory to find a leading old-school therapist lifting up his voice against it. Dr. Hobart A.

Hare describes a frequent result of its use as being "a condition of nervous irritability, which, in some patients, is not only disagreeable but alarming." For asthenic patients—the debilitated, the exhausted, the convalescent—he finds by extensive experience that there develops under its use mental disquietude and a condition of what might be called "explosive nervousness" amounting, at times, to "strychnine delirium." He protests against its continued use as a nervous and circulatory stimulant, which is all it can be.—*Amer. Med. Monthly*, July.

Supra-renal Extract.—The contractive power exerted over the arterioles by supra-renal extract is giving it a place in the treatment of glaucoma, in which its addition to the usual eserine and pilocarpine instillations seems to effect much good.—*Hahn. Monthly*, June, p. 392.

THERAPEUTICS.

Adenoids.—"The recurrence of adenoids is a fertile source of disappointment to parents whose children are so unfortunate as to suffer from these growths. The operation for their removal may be carried out with perfect success, but the predisposition remains. Adenoid tissue grows quickly, and the original condition is soon reproduced if reliance is placed too entirely upon operative measures. . . . There is a growing disinclination amongst the more observant mothers to submit their children to operation."—D'Arcy Power, *Lancet*, December 22, 1900.

Dystrophie orchidienne.—Atrophy of the testicles, when premature, is found to induce a condition somewhat similar to myxœdema; and here, too, feeding with the defective gland has proved remedial.—*L'Art Médical*, July, p. 54.

Keratitis.—Dr. Thomas M. Stewart records a case of deep infiltration of the cornea in connection with phlyctenular ophthalmia, where, after failure of various remedies, kali bichromicum 3x effected a speedy cure.—*Hahn. Monthly*, June, p. 410.

Purpura.—Dr. Biggar relates a case of this disease which may fairly be called malignant, in which lachesis (dilution not stated) pulled the patient through.—*Amer. Homœopathist*, July 15, p. 223.

Tubercular peritonitis.—Dr. Yeo has treated tubercular peritonitis like tubercular meningitis, by iodoform internally and externally. He gives three cases of recovery under such medication.—*Lancet*, March 16, 1901.

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LAWS AND BYE-LAWS
OF THE
BRITISH HOMŒOPATHIC SOCIETY.
INSTITUTED IN 1844.

CONSTITUTION OF THE SOCIETY.

I. This Society has for its objects the advancement and extension of the principles of Homœopathy.

II. The Society shall be divided into Fellows, Ordinary and Corresponding Members.

III. The officers of the Society shall consist of a President, two Vice-Presidents, a Treasurer, Council, the Editors of the Journal, a Librarian, and an Honorary Secretary or Secretaries, all of whom—except the Editors of the Journal, the Librarian and the Honorary Secretary or Secretaries, who shall be elected by the Council—shall be elected annually, and be re-eligible; but no President or Vice-President shall hold his office for more than two years in succession.

IV. All Elections shall be conducted by Ballot.

V. Ordinary Members must be medical men or women, registered in the United Kingdom, India, or the Colonies, or holding legal qualifications obtained in India or the Colonies; they shall pay on admission a fee of one guinea,¹ and an annual

¹ See Law VIII.

subscription of one guinea to the funds of the Society, and have a right of voting when present at the Meetings. All Members residing out of the United Kingdom, or who shall be prevented by illness or any cause that is satisfactory to the Council from practising their profession, shall pay an annual subscription of half a guinea.

VI. Every person desirous of becoming a Member of the British Homœopathic Society must be proposed by two Members. The application and proposal must be in the following form :

I,
(Professional Qualifications)
 of *(place of residence)*
 desire to become a member of the British Homœopathic Society, and if elected will recognise and observe the Laws and Bye-Laws thereof.
 (Signed.)

We, the undersigned, attest from our personal acquaintance with
 of
(Qualifications) , that he has
 fulfilled the requirements of Law V., and that he is a proper person to
 become a Member of the Society.
 (Signed by two Members.)

The proposal must be publicly read by the Secretary, and shall be announced on two occasions in the circulars summoning Meetings, before the candidate is balloted for.

VII. A majority of four-fifths of the Members present must be in favour of the Candidate for his Election.

VIII. Members residing more than ten miles from the General Post Office shall be considered Provincial Members, and pay no admission fee.

BRANCHES.

IX. For the further advancement and extension of the Society, Members may form themselves into separate bodies, to be styled Branches. Each Branch shall be free to govern itself as its Members think fit, but no Branch Law shall be valid which has not previously received the sanction of the Council. Each Branch shall pay its own expenses, and no Branch shall be deemed for any purpose the agent of the Society, or have the power to incur any obligation on its behalf.

FELLOWS.

X. Fellows must possess the usual qualifications of Members, must have been Members of the Society for at least five years, and have contributed at least three original Communications. The new Fellow shall, on election, pay an enrolment fee of one guinea.

(a) A Member desirous of becoming a Fellow must petition the Society through the President, who must certify that the Member has fulfilled the conditions in the preceding law, entitling him to present his petition, before it can be taken into consideration.

(b) The election of a Fellow shall be determined by a majority of two-thirds of the Members present, after the petition has been announced on two occasions in the circular summoning meetings.

(c) Any Member who, in the opinion of the Society, has at any time distinguished himself in science or literature, may be elected a Fellow by a majority of at least three-fourths of the Members present at the Annual Assembly.

CORRESPONDING MEMBERS.

XI. Corresponding Members must be Medical Men of some recognised University, College of Surgeons, or Licensing Body, and engaged in the practice of Homœopathy out of the United Kingdom. They shall not be subject to any payments; nor shall they have the right to vote.

JOURNAL

XII. The Journal of the Society shall be published quarterly in London, and shall be under the direction of an Editor, or Editors, who shall be responsible for its proper issue.

Once in every year a list of the Officers, Fellows, Members and Corresponding Members, with their addresses, shall be published separately as a supplement to the Journal.

ORDINARY MEETINGS.

XIII. The Ordinary Meetings of the Society, at which five Members shall form a quorum, shall take place once a month, during the Session, which shall extend from October to June inclusive. But the Society shall have the power of prolonging the Session, if required.

EXTRAORDINARY MEETINGS.

XIV. An Extraordinary Meeting may be called by the President, or on the requisition of five Members.

ANNUAL ASSEMBLY.

XV. An Annual Assembly of the Society shall be held in London, in the month of June or July, each year, for the pur-

pose of taking into consideration matters pertaining to the interests of the Society, and of Homœopathy in general.

(a) The Annual Assembly shall consist of Meetings on two successive days, and on a third if necessary. Five Members shall form a quorum.

(b) At the last Meeting of the Assembly, the Officers of the Society shall be elected for the ensuing year. The President, Vice-Presidents, and Treasurer, who shall be Fellows of the Society, shall be the first Officers elected at the Annual Assembly. Four Fellows and two Members shall next be elected to form, with the above, and the Ex-President, the Branch Representatives and the Secretaries, the Council of the Society.

(c) At the Annual Assembly any Member may propose additions to or alterations of the laws. The proposition must be in writing, and seconded, and must have been inserted in the circular summoning the meetings, and shall be discussed at the second meeting of the assembly; and four-fifths of the Members present must be in favour of the proposition before it can pass into law.

(d) On rejection of such proposition, no resolution affecting the same law, or of a like tenor, can be brought forward during the same Assembly.

OFFENCES AND PENALTIES.

XVI. If any Member has cause of complaint against another, he shall be entitled to claim the protection of the Society by first stating his case to the President. The President, if he deem the matter a fit subject for inquiry, shall, with two Members of the Society (the person complaining and the person complained of each choosing one), investigate the grounds of the accusation, and determine whether the matter can be settled by an amicable adjustment, or whether it shall be referred to the Council; who,

in conjunction with the aforesaid parties, shall decide—whether the question in dispute can be adjusted,—whether the offending party shall be admonished by the President,—or whether, finally, it shall be brought under the consideration of a full Extraordinary Meeting of the Society, as conduct deserving a public reprimand in the presence of the whole Society, or expulsion of the offending Member.

XVII. Any Member who shall intentionally infringe the Laws and Regulations of the Society, or shall by speaking, writing, printing, or otherwise, do anything to the detriment or dishonour of the Society, shall be liable to expulsion under the obligation signed by him on his nomination.

XVIII. Any person who shall announce by placard on any public place, or shall publish in any advertisement or circular letter, his mode of practice or place of abode, or shall sell, or cause to be sold, any secret remedy or nostrum, or shall publish any pamphlet or book in which cases of cure are detailed and the remedies concealed, is not admissible as a Member; and, moreover, if any Member shall commit any of the above offences against the Society, he shall be liable to expulsion.

XIX. Whenever any Member, by the infringement of the foregoing laws, or by any other act, shall, in the opinion of the President and Council, have rendered himself liable to expulsion, the Secretary shall notify the same to the offending party; an Extraordinary Meeting of the Society shall be convened for the purpose of taking the matter into consideration, at which Meeting the accused party shall have an opportunity of explaining. The question shall be decided by a majority of four-fifths of the Members present, the votes being taken by ballot.

XX. Expulsion deprives a Member of all the privileges of the Society, and his name shall be struck off the list of Members. The vote of expulsion shall be entered upon the Minutes, and a

copy of such Minute shall be forwarded to the Member expelled, and to the Members generally.

XXI. A Member omitting to discharge his debts to the Society before the close of the Annual Assembly, shall be liable to have his name erased from the list of Members.

THE PRESIDENT AND VICE-PRESIDENTS.

XXII. The President, or in his absence one of the Vice-Presidents, or some other Member chosen by the Meeting, shall preside at all Meetings, and conduct the business of the Society according to the forms prescribed.

(a) The President of the Meeting shall announce from the chair the subject of the evening's discussion, signify any vacancy occurring in the Office-bearers of the Society, and report progress in case of adjournment of any Meetings.

(b) On all occasions of voting, the President of the Meeting shall receive from the Secretary the report of the Ballot, and communicate the result to the Society.

(c) The President of the Meeting shall have a casting vote in addition to his vote as a Member.

(d) The President is *ex-officio* Chairman of all Committees, but with the option of declining attendance; whereupon one of the Vice-Presidents or some other Member chosen by the Meeting shall preside.

THE COUNCIL.

XXIII. The Council shall consist of the President, two Vice-Presidents, the Treasurer, the Ex-President, the Secretaries, together with four Fellows and two Members, to be elected

annually, and to be eligible for re-election ; and a Fellow or Member to be nominated annually by each Branch. Three Members of the Council shall form a quorum. The Editors of the Journal and the Librarian may *ex-officio* attend all Meetings of the Council, but are not entitled to vote.

The business of the Society shall be managed by the Council, who shall meet not less than four times a year ; shall elect the Honorary Secretaries, the Editors of the Journal and the Librarian ; shall direct the publications of the Society, and shall annually prepare a report of the work and progress of the Society, to be presented at each Annual Assembly.

THE TREASURER.

XXIV. All moneys shall be paid into the hands of the Treasurer, and the appropriation of the funds of the Society shall be subject to the decision of the Annual Meeting.

(a) The Treasurer shall take charge of and pay to the Bankers all the funds of the Society, and shall prepare a financial statement to be laid before the Annual Assembly.

(b) The Treasurer shall keep a cash-book of all his receipts and payments.

THE HONORARY SECRETARIES.

XXV. (a) They shall send to all Members of the Society timely notice of all meetings, ordinary and extraordinary, and of the annual assembly.

(b) One of them shall attend every meeting of the Society and Council, and take Minutes, in which shall be recorded the name of each Member attending the meeting ; the names of Visitors ; the titles of the paper or papers which may be read, together with the names of those who take part in the discussion. He

shall faithfully record any other business occurring during the course of the evening.

(c) They shall ascertain on the nomination of any candidate that he fulfils the requirements of Law V.

(d) In case of voting they shall distribute the balls, bear round the ballot-box, attended by a Member as teller, and report upon the ballot to the President of the Meeting.

(e) They shall notify to new Members their election, and provide them with copies of the Laws.

(f) They shall keep a book of incidental expenses, for the re-imbusement of which they shall receive an order from the Treasurer.

PAPERS.

XXVI. All Papers read before the Society become thenceforth the property of the Society, and shall be deposited in the hands of the Editors of the Journal.

The Author of a Paper read before the Society, wishing to publish it himself, must obtain the sanction of the President and the Council.

No Member shall publish, or furnish any materials for publishing, any Transactions of the Society, without the authority of the President and the Council.



BYE-LAWS.

SECTIONS.

I. The work of the Society shall be divided into the following sections :—

- (a) Materia Medica and Therapeutics.
- (b) General Medicine and Pathology.
- (c) Surgery and its special branches of Gynæcology.

II. Each section shall be controlled by a Committee of five Members elected at the Annual Assembly, who shall choose two of their number as Chairman and Secretary respectively. The Honorary Secretaries of the Society shall be *ex-officio* members of each committee.

III. Each section shall, as far as possible, have allotted to it three evenings in rotation during the session. The Secretary of the section shall be responsible to the Honorary Secretaries for the production of papers on the evenings allotted to it.

ORDINARY MEETINGS.

IV. Ordinary Meetings shall commence at eight o'clock, and shall not be prolonged beyond half-past ten, except by a vote of the majority of the members present. The order of business shall be as follows :—

- (a) The Minutes of the preceding meeting read.
- (b) New petitions for admission read.
- (c) Candidates for admission balloted for.
- (d) Miscellaneous business.
- (e) Visitors announced and introduced.
- (f) Specimens, cases, &c., shown.
- (g) Papers read and discussed.
- (h) Meeting closed.

V. Each Member is entitled to introduce a Visitor to the Meetings of the Society, on delivering his name in writing to the President of the Meeting, who shall have the power to invite him, if a medical man, to take part in the discussion.

COUNCIL MEETINGS.

VI. The Council shall meet at least four times a year.

LIBRARY.

VII. The Librarian shall take charge of the books, periodicals, and papers belonging to the Society. He shall see that all books belonging to the Society are duly entered in the catalogue, and that the periodicals and pamphlets are from time to time suitably bound.

VIII. The Library shall be open for reference and for the loan of books at the ordinary office hours of the hospital, but facility shall also be given for obtaining books on loan on the evenings of the Meetings of the Society. For any Member not able to apply personally, application forms will be provided which will entitle him to receive not more than four volumes at a time, provided he undertakes to defray the carriage to and

from the Library. All books must be returned within a month, unless a special application for renewal has been made.

IX. Any work soiled or injured must be replaced at the expense of the Member so injuring it.

X. A book shall lie upon the Library table, in which each Member may propose the purchase of such works as he may think suitable for the Library ; which book shall be laid before the Council at their next meeting, and without their order no book shall be purchased.



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UNIVERSITY
JAN 13 1901

THE JOURNAL
OF THE
BRITISH
HOMŒOPATHIC
SOCIETY

EDITORS

RICHARD HUGHES, M.D.

GILES F. GOLDSBROUGH, M.D.

New Series

Vol. 9. No. 36



October, 1901

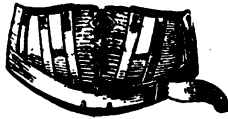
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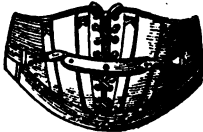
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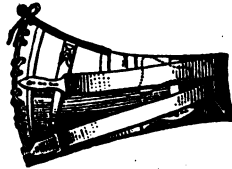
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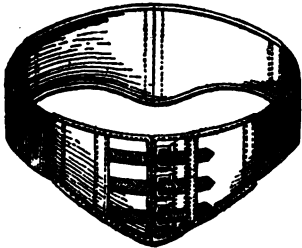
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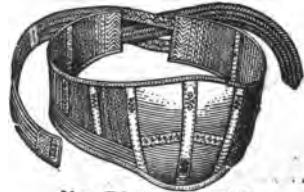
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The Journal

OF THE

British Homœopathic Society.

No. 36.

OCTOBER, 1901.

Vol. 9.

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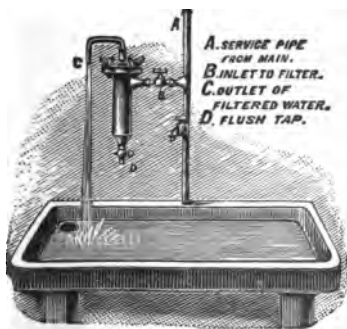
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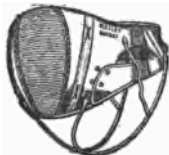
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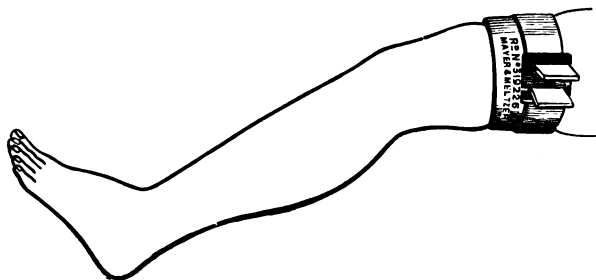


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