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## Original Communications.

### HEMIATROPHIA LINGUÆ OF EXTRA-CRANIAL ORIGIN.

By H. S. BIRKETT, M.D.,

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*(Read before the Canadian Medical Association, at Toronto, September 11th, 1890.)*

This case concerns a young man, W. C. B., aged 23 years, a bank clerk, who, in November 1889, consulted me in reference to a sensation of phlegm dropping from the back of the throat, or, as he called it, "catarrh," from which he had suffered for about one year.

Proceeding to examine the case, I was at once struck, when the patient opened his mouth, with the position of the tongue. It lay on the floor of the mouth, its tip pointing to the left and beyond the mesial line, and not in its normal position, as Gowers holds it to be when the hypoglossal nerve of one side is paralyzed,\* (*vide* accompanying drawing, Fig. 1); the right half is observed to be more bulky and stands more prominently in front of the opposite half, which is much retracted and hidden by the bulkiness of the other side, due to the retraction of the genio-hyoglossus muscle of the left side.

Upon the patient protruding his tongue the exactly opposite conditions are to be noticed. (Fig. 2.) The tip deviates at once to the right side and turns beyond the middle line to the right. The right half is noticed to be much smaller: its surface

\* Gowers: "Diseases of the Nervous System," 1883. Vol. ii, p. 275.

showing numerous rugæ or folds : its colour quite yellow, whilst that of the left side is almost purple : to the touch, the right half is quite soft and flabby. The special sense of taste (differentiat-

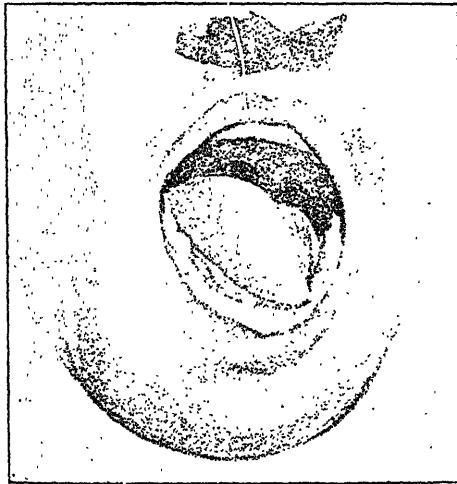


FIG. 1.

† This sketch was made by R. Harris, R.C.A., and is a very accurate representation. I have had the cavity of the mouth also photographed, but owing to the difficulty of illuminating the cavity the details do not come out so distinctly.

ing between sweet and sour, heat and cold) at the posterior third and anterior two-thirds of the tongue and that of ordinary tactile



FIG. 2.

[From a photograph by Wm. Notman & Son, Montreal]

sense are quite intact. No fibrillary twitching present. The electrical reaction of the muscles of the tongue was kindly tested by Dr. James Stewart, who found that the reaction of degeneration was present in the right half whilst that of the left was normal.

Directing the patient to phonate "ah" causes the soft palate to deviate to the left in its upward movement. (Fig. 1.)

In the next step of the examination it was ascertained that there was no response to titillating the mucous membrane of the fauces; the soft palate remaining quite passive: even touching the posterior wall of the pharynx caused no reflex movement, and it was an extremely easy matter, with the rhinoscopic mirror *in situ*, to pass a suitably curved probe into the naso-pharynx and touch the mucous membrane covering the roof, posterior and lateral walls of the pharynx, and the Eustachian tubes, without the velum palati being elevated or without the patient having any knowledge of the presence of the probe. Sensation, however, about the posterior extremities of the inferior and middle turbinated bones is intact. Sensation of the lips and buccal mucous membrane is also intact.

Proceeding to the laryngoscopic examination, the image showed that, during quiet respiration, the right vocal cord holds a position midway between that of extreme abduction and adduction, or in the so-called "cadaveric position." Upon the phonation of "ah" or "eh" the left vocal cord swings promptly across the median line to meet its fellow of the opposite side, this latter one at the same time making an imperfect movement of adduction. The effect of these movements is to give the larynx the appearance of being tilted somewhat to the right. Upon deep inspiration the left vocal cord abducts to its full extent, and the right makes but a small excursion in that direction.

The position of the epiglottis is that of midway between the vertical and horizontal, and upon phonating "ah" or "eh" there is an attempt at elevation on the left side. Upon testing the sensibility of the mucous membrane in these regions, I found it diminished all over as far as the level of the epiglottis, but beyond this point the laryngeal probe could not be passed without

the patient saying that he did not feel it. In appearance the mucous membrane of the larynx is normal, that of the nasopharyngeal space is slightly atrophic, the secretion being dried here and there into small scales.

The pulse at the wrist I found to be 96. Physical examination of the chest was negative in its result.

Upon questioning the patient the following history was obtained:—He had always enjoyed good health until nine years ago, when he was attacked with mumps, and whilst convalescing “caught cold” in the right side of the neck, which resulted in a large and painful swelling making its appearance on the right side just posteriorly to the angle of the lower jaw. About two weeks later the patient noticed that he had some difficulty in speaking and making himself understood, this being especially noticeable in words containing the letter “r.” There was no difficulty in eating or swallowing, nor did the food regurgitate through the nostrils. With the onset of this difficulty in speaking the patient noticed that when the tongue was protruded it deviated to the right side. About five years later he noticed that when washing the right side of the neck, if he used any undue pressure over the original site of the swelling it led to the right half of his face becoming flushed and moistened with perspiration, and further, that there was an extreme sense of dryness in the throat, which was of such a degree as to not allow him to speak, this condition lasting for nearly three minutes.

The examination of the eyes was kindly undertaken by Dr. Buller, who reports as follows:—The pupil of the right eye is found to be smaller than that of the left, the measurements being: R, 2.5 mm.; L, 4 mm.; both symmetrical in shape; each reacts to light and with accommodation; muscular movements normal. A narrowing of the right palpebral fissure is marked. Under atropine the vision, R, =  $\frac{5}{6}$  with -1.00 D sph. L, =  $\frac{5}{6}$  with -0.25 D sph. Fundi normal.

Upon examining the region where the swelling made its appearance there is found a firm, smooth, immovable infiltration situated close to the anterior border of the right sterno-mastoid muscle, at the level of a line drawn backwards from the angle

of the lower jaw ; it extends upwards and downwards from this point for one-quarter of an inch. The skin is freely movable over it. There is a small, irregular superficial cicatrix to be seen in this region, the result, the patient says, " of having had caustics applied to the swelling." Firm pressure upon this infiltrated and thickened area at once produces a redness of the right half of the face and right ear, also a marked degree of right-sided hyperidrosis ; concomitantly with these symptoms a dryness of the throat is produced, and to such a degree as to prevent the patient from speaking for a few minutes.

Atrophy of one half of the tongue as a symptom of a central nervous lesion is quite common, but as the effect of one, peripheral in situation, it seems to be rare, and this has led me to search the literature for all recorded cases in which the symptoms were of peripheral origin, and although I have been enabled to collect thirteen in which hemiatrophy of the tongue was present, yet none of these is exactly parallel to the one now under consideration. Those recorded and their authors are : (1) Paget<sup>1</sup> ; (2) Morison<sup>2</sup> ; (3) Fairlie Clark<sup>3</sup> ; (4) Habershon<sup>4</sup> ; (5) Fagge<sup>5</sup> ; (6) Hutchinson<sup>6</sup>, this author at the same time mentions two others which came under his notice<sup>7</sup> ; (9) Romberg<sup>8</sup> ; (10) Erb<sup>9</sup> ; (11) Ballard<sup>7</sup> ; (12) Barlow<sup>8</sup> ; (13) Trevelyan<sup>9</sup>. The lesion in the present case is certainly peripheral, the nature of which is doubtless the result of inflammatory changes set up either in or about (probably both) a cervical gland situated at a point just behind the angle of the lower jaw of the right side.

From the symptoms which the patient presents, the lesion has involved the hypoglossal and vagus nerves with its accessory branch, the pharyngeal plexus, and the superior ganglion of the cervical sympathetic—all of the right side, and which, from their

<sup>1</sup> Trans. Clinical Soc., Vol. ii, p. 235.

<sup>2</sup> Brit. Med. Jour., 1888, p. 75.

<sup>3</sup> Lancet, 1871, p. 815.

<sup>4</sup> Med. Times and Gazette, Vol. i, 1850, p. 57.

<sup>5</sup> " Diseases of the Nervous System," Vol. ii, 1853, p. 302.

<sup>6</sup> Deutsch. Arch. f. Klinische Medicin., Bd. xxxvii, s. 265.

<sup>7</sup> Med. Times and Gazette, Vol. i, 1869, p. 296.

<sup>8</sup> Lancet, 1859, p. 886.

<sup>9</sup> Brain : Spring number, 1890.

anatomical situation, could be involved in a swelling situated where that in the present case is. The symptoms in this case are most striking and extremely interesting, and we may, with advantage, briefly consider each one.

1. *Hemiatrophy*.—Wasting of the muscles of one side of the tongue, tactile and the special sense of taste being intact, all point to support the view held at the present day that the function of the twelfth nerve is purely motor; the function of tactile sense being supplied by a small branch derived from the plexus ganglioformis vagi.

2. *Paralysis of the right half of the soft palate*.—This is due, of course, to the want of action of the levator palati and azygos uvulæ. The nerve supply of these muscles is, even at the present day, *sub judice*, and it is very generally taught at present that the nerve supply to these muscles is from the facial, through the large superficial petrosal nerve, and our clinical teaching is, that in every case of central facial paralysis we ought to look for paralysis of the soft palate, thus regarding the seventh nerve as supplying a motor function to the levator palati and azygos uvulæ muscles; but upon this point we have the valuable opinion of Hughlings Jackson, who says that “it is generally held by physicians that in paralysis of the facial nerve from lesion to its trunk before the giving off of the branch to Meckel’s ganglion (the large superficial petrosal) there is some paralysis of the palate; but I have never seen a case of this kind of paralysis from any cause in which the palate was paralysed. In cases even of paralysis of this nerve from disease in the pons Varolii, in which, of course, the injury must have been above the origin of the branch to Meckel’s ganglion, the palate seemed to be quite normal. Instances of slight deviation of the uvula are frequently met with in the out-patients’ room, and in patients who have no facial paralysis; *but real paralysis of the palate is decidedly a rare thing. If we exclude diphtheria, it is very rare indeed.*”<sup>1</sup> In support of this, I think the case now under consideration lends some weight, for very careful examination of the muscles supplied by the seventh nerve reveals that

<sup>1</sup> London Hospital Reports and Clinical Lectures, 1861.

there is positively no evidence of any of them being in the least implicated. Recent experimental investigations by Bevor and Horsley strongly support the view held many years ago by Hughlings Jackson, that the facial nerve plays no part in supplying the elevating muscles of the soft palate with motor power, and to corroborate this statement I quote the opinion of these investigators: "The idea (*i.e.*, that the levator palati and zygus uvulæ muscles are supplied by the facial nerve through the superficial petrosal nerve) upon which so much stress has been laid is entirely hypothetical, as might have been shown at any time by stimulating the facial nerve in the skull and observing the soft palate. We have found that stimulation of the peripheral end of the divided facial nerve in the internal auditory meatus failed to cause, even with the most powerful currents, the slightest movement of the soft palate, although the face was thrown into violent spasm. We find that the levator palati is supplied entirely by the eleventh nerve. When the peripheral end of the cut nerve was stimulated inside the skull, elevation of the soft palate on the same side was invariably seen. The path by which the fibres from this nerve reach the palate is probably through the upper branch of the pharyngeal plexus."<sup>1</sup>

Fraenkel remarks that in all the cases of paralysis of the accessorius which have come before his notice the soft palate was always involved.<sup>2</sup>

3. *Diminished sensation of the mucous membrane of the buccal and naso-pharynx.*—These parts derive their sensory fibres from branches of the vagus, glosso-pharyngeal nerves, and from the upper cervical ganglion, these forming what is known as the pharyngeal plexus. That the glosso-pharyngeal nerve itself is not involved in the lesion in this case is proven by the fact that the special sense of taste at the posterior third of the tongue is quite intact—presuming, of course, that the view now generally accepted by physiologists that the function of the ninth nerve is, besides being sensory and motor, the nerve of special sense of taste to the posterior part of the tongue. (This view

<sup>1</sup> Brit. Med. Jour., 23th Nov., 1889.

<sup>2</sup> Berlin. Klin. Wochen., No. 8, s. 150, 155.



is, however, opposed by Gowers, who holds that the trigeminus alone carries on this function to the whole of the tongue.<sup>1)</sup> To support the statement that the nerve trunk itself is not involved, we find that the patient has not, and never had, any difficulty in swallowing, and recorded cases of unilateral involvement of the glosso-pharyngeal trunk have all been attended with difficult deglutition.

To support the view that the glosso-pharyngeal nerve is the nerve of taste to the posterior part of the tongue, Popc<sup>2</sup> has recently published a case of thrombosis of the vertebral artery pressing on the glosso-pharyngeal nerve and producing unilateral loss of taste at the back of the tongue.

Reference to the accompanying diagram (Fig 3) will show that it is quite possible for a lesion, situated as it is in this case, to press only on the branches of the pharyngeal plexus without involving the trunk of the glosso-pharyngeal nerve and at the same time give rise to the symptoms here present.

4. *Paresis of abduction and adduction of the vocal cord* on the same side as the lesion, with diminished sensation in the lower part of the pharynx; and a somewhat quickened pulse (96-98) suggest the implication of the vagus above the superior aryngal nerve.

5. The most interesting group of symptoms which we now come to consider embraces (1) *myosis of the right pupil*; (2) pressure over the site of the inflammatory swelling produces (a) *flushing of the right side of the face*; (b) *hyperidrosis of the same side*; (c) *dryness of the throat*.

Such a group of symptoms is, as we know from the experiments of Bernard, produced by the unilateral section of the cervical sympathetic. The oculo-pupillary symptom is in this case permanent, indicating the implication of the function of the sympathetic as to induce a paralysis of the dilator fibres of the iris, leaving thus the action of the third nerve unopposed; but the flushing and hyperidrosis of the same side of the face, and the dryness of the throat, are in this case only transitory, being

<sup>1</sup> Gowers: "Diseases of the Nervous System," Vol. ii, p. 209.

<sup>2</sup> Brit. Med. Jour., 23rd, Nov., 1889.

brought about by pressure applied to the site of the inflammatory swelling, inducing, I would suggest, (1) a vaso-motor paresis, thus giving rise to the first-named symptom, (2) stimulation of the proper secretory fibres of the sympathetic, calling forth an hyperidrosis, and the pressure, if still continued, involving the salivary secretory fibres of the sympathetic to a degree equal to

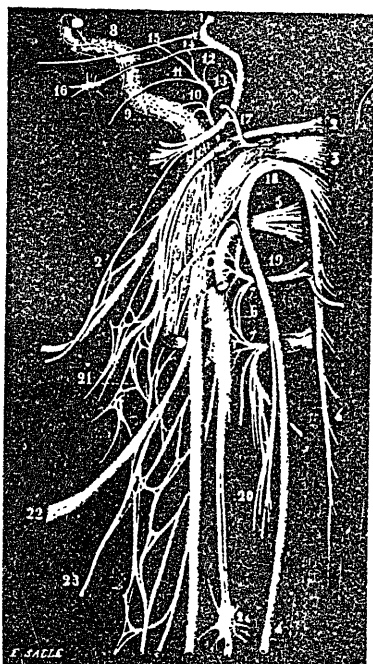


Fig. 3—Quain's Anatomy, p. 591.

1, Facial nerve; 2, glosso-pharyngeal with petrous ganglion represented: 2', connection of the digastric branch of the glosso-pharyngeal nerve; 3, pneumo-gastric with both its ganglion represented, 4, spinal accessory; 5, hypoglossal; 6, superior cervical ganglion of the sympathetic: loop of union between the two first cervical nerves; 8, carotid branch of the sympathetic; 9, nerve of Jacobson (tympanic) given off from the petrous ganglion; 10, its filaments to the sympathetic; 11, twig to the Eustachian tube; 12, twig to the fenestra ovalis; 13, twig to the fenestra rotunda; 14, twig of union with the small superficial petrosal; 15, twig of union with the large superficial petrosal; 16, otic ganglion; 17, branch to the jugular fossa giving a filament to the petrous ganglion; 18, union of the spinal accessory with the pneumo-gastric; 19, union of the hypoglossal with the first cervical nerve; 20, union between the sterno-mastoid branch of the spinal accessory and that of the second cervical nerve; 21, pharyngeal plexus; 22, superior laryngeal nerve; 23, external laryngeal; 24, middle cervical ganglion of the sympathetic.

paralysis, for it is found that the saliva is diminished in amount in man in cases of paralysis of the sympathetic nerve.<sup>1</sup>

In lesions of the cervical sympathetic, oculo-pupillary symptoms are more frequently observed than vaso-motor, and this is explained by Eulenberg and Guttman by the view that the oculo-pupillary fibres are more superficial in the ganglia than the vaso-motor,<sup>2</sup> and may not the conditions here present in this case support this view, for it is found that the myosis is persistent, due, doubtless, to the effect of constant pressure by the inflammatory thickening; but the symptoms of flushing, hyperidrosis, and dryness of the throat are only temporary, and induced when greater and deeper pressure is made over the site of the swelling.

Raymond,<sup>3</sup> in a recent article, divides the cases of local sweating into the following groups:—

1st, Those in which there is an alteration in the cerebro-spinal system.

2nd, Those in which the cervical sympathetic or the first thoracic ganglion is affected.

3rd, Those in which the nerves of the face are affected.

4th, Those in which the sweating is reflex.

Thus there are two classes of cases characterized by increased sweating—those in which there are, and those in which there are not, vaso-motor disturbances. The lesion in the former is in the sympathetic of the neck. That the pupil is sometimes contracted and sometimes dilated depends upon the fact that the pupillary and vaso-motor nerves are probably distinct, and one set may be stimulated whilst the other is paralyzed. The author then gives an account of the various chronic inflammatory changes that have been found in the superior cervical ganglion, and concludes that these irritate the sweat secreting nerves. Lastly, he points out that the pupillary changes are permanent whilst the sweat ones are transitory, and in this respect the case now under consideration bears this out, for, as previously noted, the myosis is permanent and the lateral hyperidrosis is only pro-

<sup>1</sup> Landois and Stirling; *A Text-book of Human Physiology*, third edition, p. 215.

<sup>2</sup> E. Long Fox, "The Influence of the Sympathetic in Disease," 1885.

<sup>3</sup> *Arch. de Neurol.*, Jan. 1888. *Idem* review by White. *Brain*, Vol. xi, p. 143.

duced by pressure (irritation) upon the inflammatory thickening. Takacs' also arrives at the conclusion that sweating is not dependent upon vaso-constriction, but upon special nerve action.

Referring one moment to the ocular symptoms, it is found that the patient is myopic to the extent of 1.00 D, R. eye, and 0.25 D, L. eye, under atropine; and I find a rather remarkable statement in this association, made by E. Long Fox, to the effect that "myopia, the necessary consequence of persistent paralytic myosis, is caused by the presumed direct influence of the sympathetic on the muscles of accommodation"<sup>2</sup>; but I regard the occurrence of the myopia in this case as being merely a coincidence. In a case I recently examined there is persistent myosis, which has been "so long as could be remembered," due to pressure on the sympathetic by enlarged glands, and the refraction proves the existence of hypermetropia (0.5 D).

In conclusion, I would draw the following deductions from this case:

1. That the hypoglossal is the motor and trophic nerve of the tongue.

2. That the glosso-pharyngeal nerve is concerned in the function of taste.

3. That the branches of the pharyngeal plexus supply the mucous membrane of the naso- and buccal pharynx with sensation.

4. That the motor nerve of the levator palati and azygos uvulæ muscles is probably the accessorius.

5. That the superior ganglion of the cervical sympathetic contains (a) dilator nerve fibres to the iris of the same side; (b) vaso-motor; (c) sweat; (d) secretory nerve fibres to the mucous glands of the pharynx.

<sup>1</sup> Centralblatt f. Nerv. hlkd., 1881 and 3.

<sup>2</sup> "Influence of the Sympathetic in Disease," 1885.

## STUDY OF KOCH'S TREATMENT IN BERLIN.\*

BY GEO. T. ROSS, M.D.,

Professor of Physiology, Bishop's College, Montreal.

*Gentlemen*,—The subject of my report indicates that the work referred to was carried out in the chief centre where the lymph cure is being tested, but as the field in London is secondary only to Berlin in this respect, I will also venture to give a few facts concerning the work done in the English capital.

Speaking generally, I think it may be safely said that the evidence furnished us throughout Europe up to the present time regarding the Koch remedy ranges all the way between what is contradictory and conflicting to the point where the results are both brilliant and surprising. The exact result of a dose given in any case cannot be accurately foreseen, and one must be prepared for all kinds of vagaries while watching the phenomenon called reaction. Unsuspected general tubercular deposits or idiosyncrasy may develop a dangerous condition of collapse after a minimum dose of one or two milligrams, while a large dose may not at once manifest its effect; but even when cautiously proceeding a startling condition of things may develop. In my experience, however, these unpleasant surprises have not occurred with any frequency where the precaution was taken to permit normal temperature to be resumed before repeating the dose, a rule which Koch himself emphasizes. As you all know, the temperature after injection varies greatly, and it is important to remember that the curative process may proceed in spite of these variations and during them. I have seen good results following injections which in some cases caused hyperpyrexia and in other cases as much as two degrees subnormal temperature. Be it one extreme or the other, anything like accumulative effect is avoided by waiting until the normal point is again reached; yet throughout its administration there is no remedy in our hands to-day which we require to watch so closely in its action as this one, owing to our limited knowledge of its power. Its cardiac toxic effect is the consideration surmounting all others in im-

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\* Read before the Medico-Chirurgical Society of Montreal.

portance. Any one who neglects carefully watching the action of the heart risks the patient's life. Then we have sometimes in severe reaction a pulse of 160–200 per minute, cerebral disturbance, cyanosis, collapse, and even during the earlier experiments sometimes a fatal termination. The other general disturbances of minor importance are almost beyond reckoning, and to enumerate them would be tedious; suffice it to say that any system in the body may develop evidence of the lymph's effect upon it. Two months ago renal disturbance was thought to be a frequent complication in this treatment, but my experience has shown such to be a comparatively infrequent complication. In the hundreds of cases which it was my privilege to study, and where the condition of the urine was faithfully watched, a few instances of a cloudiness in the excretion was occasionally produced, but only in one case did I see a serious quantity of albumen passed, amounting to about 20 per cent. This condition passed off completely in three days, making it evident that the trouble arose from congestion of the kidneys during reaction and not from any lighting up of tubercular deposits in those organs, as it was feared. Bearing on this point, I might quote the opinion of Sir Morrel Mackenzie, who told me he was convinced, from what he had seen, that we need not fear renal trouble in this connection.

In *Lupus*, the good effect of the remedy is now so well established that little reference to it is required from me. Six weeks ago, however, from what I saw in London of the action of the lymph on diseased tissue of this nature, I felt persuaded that if the most skeptical, prejudiced and biassed mind, in watching the progress of lupus towards cure under this remedy, was not convinced of the brilliant, almost immediate results, then there exists nothing in the healing art that can ever be convincing to such a mind. The question as to subsequent recurrence of the disease is not what I allude to here, but the positive and rapid cure, causing, in the space of a few weeks, a putrid, ulcerating mass of rottenness to become a smooth, cicatricial surface, without a nodule of ulceration remaining. This much is conceded for the remedy, per force, because the results have been so quickly

attained in relation to parts that were readily observed during the progress of the case that cavil is now beyond reach. The only question here is one of subsequent recurrence, and that question the gratified patients who have been cured are quite willing to leave the future to deal with, their present condition being such a pleasing contrast to that which afflicted them for many years past. The worst case of this disease which had been treated by Koch's remedy either in London or Berlin is the only one that I will specially refer to, and is as follows:—

*Charité Hospital, Berlin.*—Jäger, aged 28, a man of good physique and good family history, suffered from lupus for many years. On entering hospital the diseased tissue extended over both cheeks as high as malar bones and outwards some two inches beyond angles of each jaw, downwards over lips, chin and neck to pomum Adami, nose eaten away to bony septum, and lupoid tissue extending upward over remaining nasal structure to lower border of frontal bone,—in fact, the face presented a suppurating, ulcerating, putrid mass, emitting such a horrible odor as to make his presence in the ward unupportable had it not been for the aid of antiseptics and deodorants. Treatment by Koch's lymph alone was begun on 9th December last by injection of one centigram. Reaction followed in five hours, with temperature of  $103^{\circ}$ , pulse 112. Three days after, on repeating the same dose, about similar results followed, and this happened until the fifth dose was given, when, instead of fever following, a subnormal temperature was caused. By increasing the dose one-half a normal temperature was reached; again, on giving double original dose, viz., 0.02, temperature became subnormal. This was on 23rd December, and the Christmas holidays interfering, the patient received no further treatment until the 29th December, when 0.03 c.c. were given without reaction. At this time, in spite of the intermission of about a week in treatment, the appearance of this patient was so remarkable in contrast to his condition on entering that one could not be otherwise than delighted at the wonderfully good effect produced. The last time I saw and talked with this man only a number of isolated nodules of ulceration remained, and I know from experience in

less aggravated cases that a week or two more would leave his face smooth and practically healed.

In the same ward of the "Charité" another case was quite cured where the nose was half gone, while the face, hand and arm had been badly affected, there remaining only the smooth, dark blue cicatricial surface where formerly, for twelve years, a distressing condition existed. In private talks with these patients, they assured me that for the chance of attaining such good results they would be willing to undergo the worst phases of reaction and all its attending unpleasantness.

Are not these results that call forth one's admiration? Suppose we admit that a recurrence of this disease is possible, even probable, and up to the present time no evidence is afforded to support such a conclusion, look at these patients to-day who have undergone years of misery of the most trying kind both to themselves and relatives. They would give their right hands for such relief as has already been afforded, and I would only add, briefly, that my conviction is, the relief afforded by this remedy, even in reference to the disease of lupus alone, is a God-send to humanity and worthy the highest praise we can bestow upon it. Minor cases of lupus which I watched at King's College Hospital, Sir Morrell Mackenzie's Hospital, and elsewhere, cases affecting the larynx, face and limbs are so benefited, that such men as Sir Joseph Lister, the specialists Lennox Browne and Mackenzie, Mr. Watson Cheyne and others, all expressed themselves to me as having the greatest confidence in the treatment.

The scope of this paper will not permit me to furnish one fractional part of the evidence collected in proof of the efficacy of the lymph, while a comparatively short paper would contain most of the evidence against its use. That death has been directly due to the use of the lymph is beyond question, but in the half dozen autopsies I witnessed after Koch's treatment the post-mortem evidence was overwhelming that in such cases it was worse than useless to apply this or any other remedy in the hope of cure, or even improvement.

In *Tuberculosis of the Lungs*, it is already established that far from being applicable to every case of this disease, it is



decidedly injurious and hastens the end in greatly advanced cases with large cavities ; on the other hand, both London and Berlin afford us abundant proof that in selected cases it is remarkably beneficial. My notes show that in most instances where moist râles and other evidences of tubercular deposit existed in both apices, extending over both back and front of chest, with the usual accompanying signs of progressing tubercular disease, such as cough, expectoration, night sweating, emaciation, loss of appetite, dull percussion, etc., these conditions have been changed remarkably, and in a shorter time than any other remedy was ever known to afford. This change meant, briefly, a decreased expectoration and lessened cough, cessation of sweating, gain of weight and good appetite. A clearing up of the moist râles with clear percussion and, instead of bronchial breathing, a more vesicular murmur. Although an increase of the bacilli occurs after the first injections, this passes off in most instances as the case progress, and few are discoverable later ; but this course as regards bacilli can by no means be looked upon as typical, indeed the treatment is yet too experimental to establish what may be called typical action of the remedy.

One case I saw in Charité Hospital, Berlin, where phthisis pulmonalis developed after typhoid fever, and patient gained, when this treatment was begun, just 13 lbs. in two weeks. This was looked upon as phenomenal, it is true, but he continued to gain steadily, though more slowly, in the following weeks during which I saw him. His cough had quite left him, and although looking pale and anæmic, he assured me he felt about as well as ever, and hoped soon to go home.

At a recent meeting of the Berlin Medical Society, Dr. Fraenkel read records of the encouraging results in general improvement, a general diminution of dulness over the infiltrated areas, and in many cases a prospect of cure by Koch's remedy. Up to the time I left Berlin no case had yet been discharged as cured from the hospitals. I had the good fortune, however, to see one case of a youth, aged 18, who was treated in Dr. Cornet's private klinik, and who had, the day I saw him, received his last injection previous to being sent home. The lymph had ceased

to affect him, although at first the reactions were marked. He said that his trouble began three years previously, and although his symptoms were not of an aggravated kind, his case was quite pronounced. He improved rapidly under the treatment, so that eight weeks later he was allowed to return home, with instructions to report in a month for another test injection. In his case I could not conveniently ascertain the action of the bacilli under treatment. Weight, strength and appetite were restored satisfactorily in every way. Cases of incipient phthisis, it is considered, take five to six weeks, and bad cases three to four months for satisfactory treatment. On the other hand, a young woman in Dr. Krause's clinic told me that she was worse after six weeks of Koch's remedy, and intended going home next day. A young man in a different ward of the same clinic expressed himself in the same terms. These were both cases with good-sized cavities, and the attending physicians were rather hopeless regarding them. Another case in London said that he never had night-sweats until beginning this treatment, and blamed it accordingly. Still another had such severe reaction that she feared death and would not submit to the injections again for any consideration; and so from time to time one would meet occasional cases which discouraged treatment, but these were certainly the small minority. In advanced cases no good can be looked for with any confidence. Distinct contra-indications for the Koch treatment are great loss of strength, amyloid or other degeneration of tissue, albumen, urea and cardiac complications of a serious nature. Koch does not regard slight heart disease as an obstacle, the pulse being increased long before the rise of temperature. I have seen hæmoptysis caused by the lymph in several instances, but after waiting three or four days and no further indications, treatment was resumed without bad effect.

About the beginning of last December the results of lung treatment by the lymph at both City of London Hospital for Consumption, under Dr. Heron, and at Brompton Consumption Hospital, under Dr. Theo. Williams, were most encouraging, as far as they had proceeded, and this state of things I found fully

confirmed in returning through London about a month later; nothing had occurred to change the views of these gentlemen respecting the great efficacy of the lymph. In laryngeal phthisis under Sir Morrel Mackenzie, and in cases of local tuberculosis under Mr. Watson Cheyne and Sir Joseph Lister at King's College Hospital, further experience has not altered, but confirmed, the confidence these gentlemen have in the treatment even in the face of occasional failures.

On 21st December last Dr. Cornil of Paris gave his dictum decidedly against the use of Koch's lymph, and a copy of his statements was published in the London *Lancet* of 3rd January. He said what is conceded elsewhere in regard to advanced phthisis with large cavities, that this remedy is worse than useless, and also that it is not applicable to acute or pneumonic phthisis, finishing by the statement that in incipient chronic tubercle its effect was doubtful. In passing through Paris recently I found this observer had greatly modified his views, and that the French physicians, including M. Huchard, who have had opportunities of testing the lymph, were now giving evidence much more in accord with records furnished elsewhere. As against this we have a telegram published from Paris last evening that Prof. Grasset had a patient die while under the Koch remedy whose case was not advanced tuberculosis. These are the meagre details of the case, and they are published broadcast while the scores of successful cases are only recorded in medical journals. Yet even in this case we might, if we knew all, have one parallel with the girl at Innsbrück, where, although it was believed tubercular disease was little advanced, the autopsy revealed a general disseminated tuberculosis. Again, the case reported from Buda-pesth of advanced phthisis complicated with diabetes mellitus, could not have been reasonably expected to end otherwise than it did. In these cases the fatal result has been due to the absorption of the products of the necrotic process set up by the lymph. On the 2nd January telegraphic reports from Madrid gave good results in treatment of leprosy with the lymph, and since that time we know that in New York some good work has been done in connection with this disease.

On Jan. 2nd Mr. Watson Cheynne had been summoned to St. Petersburg to treat some prominent cases of leprosy with lymph. In Hamburg the treatment of tubercle was carried on effectively at the large general hospital there, and the results were most encouraging. All conditions and stages of phthisis pulmonalis were treated, consequently ill effects presented themselves as well as good. In cases that were not too far advanced the patients showed unmistakable signs of benefit. At first the effect of reaction was loss in weight and strength, but that was very temporary, for a permanent gain in strength and flesh generally followed, with a relish and desire for food previously unknown. Owing to the fact that the good effects of this remedy are mostly confined to cases of the early stages of consumption, and to the fact that many cases in this condition, when removed from the hardships of their everyday life to where they are warmly housed and abundantly fed with what is wholesome and nourishing, frequently improve, it has been asserted that the effect of Koch's lymph is really secondary to the effect of the improved hygienic surroundings. Against that assertion we have emphatic statements from most of the leading medical men of our generation in praise of the remedy, and these men are well known to give stint praise where it is not merited. I think it may safely be said that this remedy, to be successfully handled, calls for a more accurate estimate of the patient's physical condition than any other known means of cure, and several days careful observation of the patient's condition are a necessary preliminary to treatment; a rule that is without exception. Then the continuance of this strict observation during reaction is as called for as the treatment itself, and this work must be carried out by competent trained assistants in order that every detail in the progress of the case may be noted. When, as in this treatment, the temperature has to be taken every two hours, it would be unwise to trust to the assistance of a patient's relatives as a rule.

In *Local Tuberculosis*, the results are regarded as generally beneficial. As in lung tubercle, so it is here foolish to look for markedly good results in every case treated. We are fairly

well able now, however, to indicate from experience thus far afforded what kind of cases are most amenable to this treatment. In cases of chronic enlargements of joints, I have seen, after the subsidence of reaction, a decided diminution of the morbid material, but surgery must still hold its own in such cases. In chronic enlarged strumous glands remarkably good results have been produced after two weeks treatment. One case alone in Mr. Watson Cheynne's clinic at King's College Hospital would almost appear to establish the potency of the remedy in an unmistakable way. Two injections entirely cured several chronic suppurating sinuses in the hand and arm, besides reducing by half a mass of suppurating glands with burrowing sinuses which extended in a semi-circle from ear to ear. In Paddington Green Hospital for Children, the dissolution of swollen glands, healing of ulcers, decreased discharge and healing of sinuses, all testified to the efficacy of the lymph. Again, a case of chronic tubercular diarrhoea in the Charité Hospital, which had resisted every remedy they had given, yielded in about a week to the lymph. No other remedy being employed while the lymph was given, it was at least reasonable to suppose this agent effected the cure. The case progressed well subsequently under the same treatment.

In *Laryngeal Tuberculosis*, I saw some excellent results without the evil effects that were dreaded so much at first when it was known the reactions were accompanied by various œdematous conditions. In Krause's clinic some interesting throat cases were treated with good effect. One instance in this clinic where both laryngeal and lung tubercle were well developed I would like to bring to your notice briefly. Wende, aged 38, fair complexion, medium height, good family history, merchant, had symptoms of lung and throat trouble two years. On entering hospital the records show that he had severe cough with purulent sputum, smothered breathing, moist râles, and dull percussion extending from apices of both lungs as far as fourth intercostal space; on left side, a subclavicular cavity was found. Body showed general emaciation, and night-sweating was troublesome. Voice very hoarse, and a chronic laryngitis existed, with infiltration of left vocal cord. Presence of bacilli in consider-

able amount demonstrated. Patient given full diet and put on lymph treatment by injection of 0.001 c.c. This small dose caused temperature  $103^{\circ}$ , pulse 112, and respirations 40. This temperature subsided, but rose next day to  $102^{\circ}$ , again becoming normal the following day. Next injection, given 48 hours after the first, was increased to 0.0014 c.c., or an increase of about half a milligram. This gave sharp reaction, temperature rising to  $104^{\circ}$ F. in about six hours, then dropping to normal, and next day rising to  $103^{\circ}$  and subsiding. The doses were gradually increased until, in six weeks, he was receiving 0.075 c.c. Results: night-sweats arrested, laryngitis cured, improved percussion, diminished râles, patient claims to be greatly better and as cheerful as possible regarding his condition, cough much less, formerly could not lie on right side, now comfortable in any position. The hoarseness was still marked, but the generally improved condition of this patient was not only most gratifying to himself but satisfactory to the physician, for the case gave promise of best results even in the presence of fairly well advanced disease. In taking this patient's private address he promised to write me in a couple of months regarding his health, for he was quite sanguine that about three months of the same treatment would enable him to work again and return home.

At the Throat Hospital, Golden Square, London, some excellent work was done in lupus of larynx and laryngeal phthisis. The case of a boy was interesting, who had entered with dangerous œdema resulting from lupus of larynx. Here tracheotomy was performed and Koch treatment begun. In four days the intensely red infiltrated condition subsided without any sloughing; the boy could swallow and breathe comfortably, and in some eight days wanted very much to go home, believing himself quite well enough to be looked after amongst his friends. Another severe case of lupus affecting both throat, lips and nose showed great improvement, while another of laryngeal and lung tubercle showed great benefit after two injections. Here a marked hypertrophy of right ventricular band had almost disappeared, although some swelling remained. Later on the moist râles in lung were appreciably lessening and an encouraging

improvement generally manifest, but I feel that this summary of my notes has already occupied too much time, and I will close with a few facts regarding the *diagnostic value* of the lymph.

Although the remedy has been shown to be most insidious in attaching itself to tubercular tissue generally, this quality has been proved by no means invariable, for records are given where no reaction took place in the presence of undoubted pulmonary tubercle after the injection of 1 to 10 milligrams. Again, fatal result has followed in some few instances from a minimum dose where the case was supposed to be incipient phthisis, but where the autopsy revealed unsuspected deep-seated cavities. Of the half-dozen post-mortems witnessed by me in Europe after this treatment, in every case the condition of the lungs was found to be such as would not warrant us giving the remedy in our present knowledge of its effects. In every case the tissues were either permeated generally by large tubercular deposits, some caseous, others softened into areas of pus, or the presence of cavities, large and small, have determined the fatal issue. Another factor very evident was the frequency in these cases of great emaciation and debility, such as would deter a cautious man from applying so powerful a remedy in even the smallest doses. The intravenous method of injecting the lymph, as tried by Barcelli in Italy, and which produced reaction when the hypodermic method failed, has not been done to any extent in Berlin, London or Paris. As bearing on diagnostic value, I will furnish the outline of a case treated in Berlin. It was believed by the hospital surgeons to be cancer of soft palate, pharynx and tonsils. An injection was given experimentally with no expectation of reaction, but, contrary to the accepted views, a severe reaction followed. The affected parts within sight became swollen and quite red from congestion. In two days a sloughing condition presented itself over same surface, which sloughs were in time expectorated, leaving red, glazed patches behind, and in two weeks the throat was practically healed, while patient's health generally was greatly restored. Another surprising incident occurred under Dr. Heron at Victoria Park Hospital. A. B., aged 18, thought to be a case of anæmia and non-tuber-

cular, received full injections—viz., 0.01 c.c.—to compare results with tubercular patients. To the doctor's surprise she reacted to a temperature of  $101^{\circ}$ , with swelling and pain in both knee joints. This temperature fell next day to  $97^{\circ}$ , then rose to normal. The second injection given was 0.005 c.c. instead of 10 milligrams, and this was followed by a temperature of  $103^{\circ}$  in  $15\frac{3}{4}$  hours, with no pain or swelling of joints. Without further detail, suffice it to say that this patient was treated until reaction was nil in response to gradually increasing doses. Dr. Heron was quite satisfied that this was a case of tubercular affection which in time would have developed itself. In a non-tubercular person the dose of a centigram will cause a passing effect only; in this case no suspicion of tubercle could be based on any existing symptoms.

If I had dared encroach further on the Society's time, I would have given in detail the latest phase of the Koch treatment as carried out at the hospital in Moabit, a suburb of Berlin. I refer to a few cases where resection of the ribs has been done to permit of cleansing out lung cavities, cauterizing these cavities, and local application of lymph thereto. Prof. Sonnenburg, who has the surgical wards in the Moabit hospitals, gives an elaborate account of these operations in the last *Deutsche Medicinische Wochenschrift* and their results, which are certainly satisfactory up to the present time. For the technique of the operation and the details of the work, I would refer those interested to that journal. The surgical skill, combined with the precision in medical diagnosis demanded by such operations, precludes procedure of this kind outside of large hospital centres, but the Koch treatment outside of this phase of it can be creditably undertaken by the general practitioner who will assume the labor of clinical experience which alone can qualify him.

Gentlemen, I feel that an apology is due for the length of this paper. My only excuse is the futility of attempting, even at this length, a fair synopsis of the study, during a couple of months, on this interesting subject in so great a field as that of Europe.



## SPINAL SYPHILIS, WITH A REPORT OF THREE CASES.\*

BY F. G. FINLEY, M.D.,

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Spinal Syphilis has been the subject of far less attention than the cerebral form. This may be accounted for by its much greater rarity, a fact admitted by all. Although a fairly large number of cases are on record, the numerous and exhaustive papers and monographs which have appeared in recent years on the cerebral form do not as yet exist for the spinal. An early recognition of the affection in question is, however, of hardly less importance than the same disease in the brain, as it is only in cases in which treatment is commenced before actual destruction of the nerve elements has taken place that we can hope to completely remove the disease. As the progress of syphilomata is sometimes exceedingly rapid, it not unfrequently happens that patients, especially among the lower classes, postpone their visit to a physician until after irrevocable damage has been done.

The effects of syphilis on the spine are numerous and far-reaching. In some way or other this disease predisposes to slowly progressive sclerosing changes in the nerve centres. The best known example of this is locomotor ataxia, in which probably over 60 per cent. of cases owe their origin to syphilis. A considerable number of cases of acute ascending paralysis have been observed in syphilitic subjects, and in some the symptoms have been said to pass off under suitable treatment. So far no explanation has been offered of the relation between these diseases. Myelitis in a subacute or chronic form is another affliction between which and syphilis an obscure connection exists, but at present we are only aware of the fact that many cases exist in sufferers from the latter disease. Arterial changes, more especially thickening of the intima and obstruction to the passage of blood, have been found in spinal as well as cerebral syphilis, and it has been suggested that softening may thus occur from defective vascular supply and so simulate myelitis. The facts,

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\* Read before the Canadian Medical Association.

however, that softening is rare in cases of non-syphilitic arteritis, and that inflammatory changes undoubtedly occur, rather militate against this view.

In addition to these indirect results of the syphilitic poison, symptoms are undoubtedly due to gummata and their attending inflammation. Although a considerable number of instances of syphilitic paraplegia are recorded, there are as yet but few post-mortem examinations, so that our knowledge of this subject is somewhat fragmentary.

Gummatous formations usually occur in the membranes, and the attending inflammation infiltrates the surrounding structures, causing adhesions of the membranes to each other and to the cord, and not unfrequently destroying and displacing its elements. Heuban also describes gummata of the membranes appearing as minute nodules resembling miliary tubercle. The victims of hereditary syphilis are seldom attacked by disease of the nerve centres, but a few instances are on record in which the spinal meninges have been affected. Siemerling (*Arch. v. Psychiatrie*, 1888) reports a case in which the child of syphilitic parents was attacked by hemiplegia and aphasia at the age of five; two years later optic atrophy consecutive to neuritis came on, and ataxia of the limbs. At the age of 13, death occurred, preceded by vomiting and headache. At the autopsy, in addition to cerebral lesions, the spinal pia mater was covered with gummata, which encroached on and destroyed the fibres of the cord, especially the posterior columns.

From this brief sketch of the anatomical conditions it may be surmised that the symptoms are apt to be extremely variable. There is, indeed, nothing characteristic in the symptoms, and, as Gowers well puts it, "there is no combination of symptoms produced by syphilis that are not also produced by other disease." In the diagnosis, a history or evidence of syphilis must be carefully looked for, and even if absent, it is necessary to remember Broadbent's caution that the nervous system is frequently attacked by syphilis in those in whom evidence of the disease is lacking. In any case in which there is any reason to suspect syphilis, it is an imperative duty to use anti-syphilitic remedies

without delay ; and even if the disease is not specific, the use of mercury and of iodide of potassium can do no harm.

The prognosis is not always favorable even in cases of gum mata, whilst myelitis and tabes are not affected by antisiphilitic remedies. It must be remembered that gummata are apt to rapidly cause destruction of the nerve tissue, and in such cases permanent damage will result. Then, again, there seems to be cases in which specific remedies lose their effect.

In treatment, the cases which have come under my observation have invariably had mercurial inunctions, with iodide of potassium internally in doses of from ten to thirty grains or more three times daily. Although mercury may not always be necessary, it seems by far the best practice to administer it, as it is admitted that the iodide alone may fail. Dr. Gowers recommends the iodide to be given for not longer than six to ten weeks, stating that it can do all it is capable of in that time, and that a longer continuance may be harmful or render the subject insusceptible to its influence.

Three cases which have come under my observation may be quoted to illustrate some of the phases of syphilitic spinal disease.

CASE I.—Mrs. M., aged 32, came to the Montreal Dispensary in June, 1888, complaining of headache, double vision, and weakness. The woman had been married for eight years to a dissolute husband, and had had two children and one miscarriage. Three years previously she had a cutaneous eruption, and last summer sores on the face and leg.

*Examination.*—The patient is anæmic and thin. There are pigmented scars on the knees and toward the lower end of the left leg, which were looked upon as undoubtedly syphilitic. There were also five or six round and non-pigmented scars on the face. She was ordered ten grains of iodide of potassium, and returned in a month with symptoms relieved, and was then ordered to take a mixture of bichloride of mercury and iodide for some months. This, however, she failed to do.

This woman was next seen in January, 1889, when she returned with a marked ataxic gait. On enquiry, she stated that

two months previously she noticed a sensation of pins and needles with weakness in the legs, also a girdle sensation round the waist and pains in front of knees, but nothing corresponding to the lightning pains of locomotor ataxia. The gait was markedly ataxic, the lower limbs being raised high from the ground and brought down violently on the heels, and she was unable to stand with the eyes closed. There was notable paresis of the lower extremities and increased knee-jerk, but no ankle clonus. Numerous patches of anæsthesia were present on the trunk, as high as the third or fourth rib, into which pins could be run without evoking any response. Touch and the sensation of heat and cold were here also lost. At the level of the girdle sensation there was a complete band of anæsthesia. Sensation in the legs was normal. The urine occasionally was passed involuntarily. The patient continued to attend for two other weeks, but as there was no improvement with specific treatment, and as it was ascertained that she was not taking her remedies regularly, she was sent into hospital. Under the influence of mercurial inunctions and iodide of potassium the ataxia rapidly disappeared, strength returned to the legs, and sensation became normal, with the exception of a girdle sensation round the waist. She left the hospital May 7, and was afterwards able to follow her employment as a washerwoman.

In this case the evidence of syphilis is placed beyond a doubt by the scars, cachectic appearance, and the rapid action of anti-syphilitic remedies. The girdle sensation and anæsthetic zone point to a lesion, probably a gumma, in the lower dorsal region. It is known that ataxia may result from disease in the course of the sensory afferent nerves, as in some cases of peripheral neuritis, or from disease of the posterior columns of the cord. Judging from the absence of severe pains in the course of the nerves, it is reasonable to suppose that the posterior columns of the cord were themselves involved, and the occasional involuntary passage of urine is also in favor of this view. The increased knee-jerks and paresis denote interference in the motor tract above the lumbar region, and both these symptoms serve to distinguish the case from one of locomotor ataxia.

CASE II.—A. A., an Italian, aged 23, a moulder by trade, was first seen July 11th, 1890, and then complained of general weakness, especially in the back and legs, and of severe pains in the knees and elbows. These symptoms had only been noticed for two weeks, and only became well marked a week previously. Three years previously the man had a sore on the penis, the scar of which still remains, and this was followed by sore throat and alopecia. A medical man whom he consulted in Italy told him that he could not marry for three years, so that his disease was evidently syphilitic.

*Examination.*—Patient is well-nourished. He complains of severe pains in the small of the back, the knees, and elbows, and there is a girdle sensation about the level of the umbilicus. These pains are somewhat increased at night. Marked paresis of all four limbs, especially the lower, and involving all the groups of muscles. The gait is normal; there is no ataxia. The knee-jerks are increased, but there is no ankle clonus. The superficial reflexes are absent, except the cremaster and the left abdominal, which are diminished. There is slight tenderness on percussion of the lumbar spines, but no rigidity of the spinal muscles. Anæsthesia to touch, and pain on the greater part of the trunk below the umbilicus and over the greater part of the thighs. Sensation in the legs is diminished, but the patient cannot bear a pin prick, as he does above. He was ordered mercurial inunctions, and used about a drachm daily; in ten days the pains had almost completely left. On Aug. 10th the arms were stronger, but the legs remain weak. Sensation in thighs and trunk has returned, and there are small areas of hyperæsthesia, also a zone of anæsthesia around the umbilicus. The superficial reflexes have returned. Was ordered iodide of potassium from the first, but has been taking it very irregularly in doses of from ten to thirty grains three times daily.

The rapid onset of the symptoms are in favor of an inflammatory process, and occurring in a syphilitic subject, there is every reason to believe that they bear the relation of cause and effect. From the symptoms attacking both arms and legs, a considerable area of the cord must be involved, and, according

to Gowers, myelitis is more likely to be present than pachymeningitis when both upper and lower extremities are affected. This point is not without value in the prognosis, as myelitis occurring in syphilitic subjects is not materially influenced by antisyphilitic remedies, and in this case it is noteworthy that there has been no material improvement in the strength of the legs. It is possible that there was also a development of specific inflammatory material which was removed by mercury, and so accounting for the disappearance of anæsthesia and of pain under treatment.

I am indebted to Dr. R. L. MacDonnell for permission to use the notes of the following case :—

CASE III. *Syphilis, Myelitis, Hemiplegia.*—A book-keeper, aged 34, was admitted to the Montreal General Hospital, Feb. 4th, 1890, for pain in the head and dizziness. One year ago he contracted a single chancre, which was followed three months later by a rash and sore throat. Although subject to headaches for three years, these have become worse since acquiring syphilis, and have been so severe as to prevent him working for five months. There is no nocturnal exacerbation. During the past four months there has been difficulty of micturition, and an occasional resort to the catheter has been required. Weakness of the legs has also been coming on for some months, with a girdle sensation round the waist. He has had no antisyphilitic treatment up to admission.

*Present condition.*—Patient is fairly nourished and intelligent. Several small ulcers on the face and in the throat. There is paresis and spasm of both legs, with increased activity of the knee-jerk and of the plantar reflex, also slight ankle clonus. The gait is shuffling, the feet being dragged along, scraping the ball of the toes on the floor. Sensation is normal. Micturition frequent, five or six times by day and three or four by night. The pupils react to light and accommodation, and there is no change in the fundus. The thoracic organs and urine are normal.

In April, weakness of the arms, especially the left, with absence of the cremaster and abdominal reflexes.

In July, when washing, he fell down, but without losing consciousness, and was found to have lost power in the right limbs. There was also right-sided ptosis and facial paralysis.

Antisyphilitic remedies, both inunction of mercury and iodide, have been administered since his admission. Power in the limbs has been gradually increasing, and he is now able to walk fairly, but there is still ankle clonus and increased knee-jerks. Loss of power in the legs and, later on, in the arms, the urinary disturbance, and girdle sensation, coming on gradually, point to the existence of a chronic myelitis. There is no marked pain or spasm in the back or along the spinal nerves, as is usual in meningitis, and the absence of any disturbance of sensation also excludes the latter disease. The effects of treatment have not been very marked, and it is probable that any improvement which has taken place may be attributed to prolonged rest. The attack of hemiplegia, preceded by head-pain and unaccompanied by loss of consciousness, is the recognized character of thrombosis, due to syphilitic arteritis, and it may be remarked that this came on when the patient was under active treatment by mercurials and iodide. One of the most noteworthy points of the case is the early date at which nervous symptoms came on. It is not usual to find either myelitis or hemiplegia until after a lapse of several years, whilst here spinal symptoms supervened not more than eight months after the chancre, and hemiplegia in about sixteen months.

## NEW OPERATION FOR REPAIR OF LACERATED PERINEUM.

By ALEXANDER DUKE, F.C.P.I.,

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I wish to bring before the notice of my gynæcological brethren an operation I have designed for the restoration of a lacerated perineum, easy of performance, and which will, when properly executed, form a good perineal floor, and I might almost say practically a new perineal body. The patient, having been prepared by the usual preliminary steps required for the old operation when under the influence of an anæsthetic, is placed in the lithotomy position, the left index finger being introduced almost its entire length into the rectum, a long, straight, double-edged bistoury is made to pierce the tissues *in front of the anus at right angles to the vulva*, and, guided by the finger in the rectum, is made to penetrate the septum for two and a half inches upwards, the incision being enlarged laterally to two inches as the knife is withdrawn. The patient is then turned on her side, and on the points of incision being pressed together, a lozenge-shaped opening will be seen, and when all sutures required have been introduced and are properly adjusted and approximated, the two cut surfaces are brought into direct apposition. The sutures are introduced by a strong eye-shaped needle with eye near point, mounted on a handle, strong silver wire being the suture preferred. The needle is introduced at edge of incision, and, guided by a finger in the rectum, is made to travel under the cut surface to its full depth above, describing the arc of a circle; and on point of needle appearing *directly opposite*, it is threaded with suture and drawn through. On the ends of this suture being drawn together with the fingers, a good idea can be formed of how many additional stitches may be required. When all considered necessary have been inserted, passed through leaden bars perforated at intervals, and approximated, a finger of each hand passed into the rectum and vagina will at once recognize the gain in thickness of septum, the external tissue being pushed fully an inch forward from anus, and forming a thick and solid



perineal body. The incision being a deep one, on union taking place between the raw surfaces, a considerable amount of support must be afforded in cases where a pessary is required, or where there is much tendency to prolapse of uterus or vaginal walls. My experience of the operation, though up to the present time limited, has satisfied me with the results, and there being *no loss of tissue whatever*, should the operation fail, it cannot add any difficulty to a subsequent one.

Even should the perineum be lacerated to verge of anus, what I describe can be done. I find that leaving the sutures for ten days is generally sufficient, but if I am in doubt as to the union being strong, I cut the wire, but leave it *in situ* for a day or two longer, thus affording some support, and relieving the strain on the edge of suture holes, and I also support the parts by long strips of adhesive plaster carried from hip to hip over new perineum. The wire should be stout and not too tightly twisted.

My friend, Dr. More Madden, has kindly given my operation a trial, and was much pleased with the results, especially in one of his cases where the old plan of operation had been tried previously but failed owing to the patient's poor state of health and a want of healing power.

The advantages of my plan of operation are briefly these:—

1st, The simplest of performance as yet proposed; no danger of hemorrhage, the surface, when dry, being brought together.

2nd, No danger of sepsis, as the incision is not open for the admission of any discharge from either vagina or rectum during healing process.

3rd, No loss of tissue, and consequently no harm done should the operation fail.

## CASE IN PRACTICE—UNTOWARD EFFECTS OF SANTONIN (?).

BY AUGUST SCHMIDT, M.D., MONTREAL.

In the forenoon of the 9th December, 1890, I was called to see a little girl aged 4 years and 11 months. When I saw the child she was in convulsions since some minutes. She had been placed in a tub of hot water with mustard. I kept her in the water and applied cold to head. Gave chloral hydrate, bromide of potassium, also inhalations of ether, all to no good effect as to termination. At first the spasms were limited to the face, then became unilateral, and finally general, death occurring about an hour and a half after the onset. During the convulsions she was unconscious.

She had had a cough for about a week. Would grind her teeth and yawn; would vomit sometimes after the cough, after which she would sleep better. On account of the above symptoms the mother got an old prescription repeated without consulting any physician, the directions for the administration of which she had been told about a year before to be one powder morning, noon and night.\* The mother gave the child the first about six in the morning, the second at about 11 A.M., and the third at about half-past 3 P.M. the same day. During the evening was not as lively as usual; went to bed and slept. At five the next morning the child made sign to the mother that she had had a stool and urinated in bed, something unusual for her to do. The mother noticed that the pillow was wet also. The child got up and had a very light breakfast. Complained of headache, wanted to go to sleep, could not sit up straight, and a short while after went into convulsions which lasted till death.

*Past History.*—Child grew fast; took cold easily. Had measles about two years previously. A year ago last September had a convulsion, the mother thinks in left side only; one eye was "crooked" at the time. The child was noticed to be dull and sleepy, and on account of those symptoms was given two

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\* After inquiry it was ascertained from the druggist that each of those powders contained grs. ii of santonin.

grs. of santonin, an hour after taking which she had a convulsion. Last June the mother thinks the child had something like a convulsion, only the eyes moving, the child holding on to a bedstead with her back towards it. This was likely caused by having had to run home from a good distance on account of a storm.

The mother, although not positive, thinks the child has had some santonin without taking convulsions. The child had been subject to headaches part of her life.

## REPORT ON THE TREATMENT OF PULMONARY TUBERCULOSIS BY KOCH'S METHOD.

IN DR. MACDONNELL'S WARDS OF THE MONTREAL GENERAL  
HOSPITAL.

BY DR. W. D. SMITH, *House Physician*.

### CASE I.—(Continued from p. 595.)

*Fifth Injection*—0.04 c.c. Jan. 19th. Temperature  $99^{\circ}$ . No reaction.

*Sixth Injection*—0.05 c.c. Jan. 21st. Temperature  $99.5^{\circ}$ . Had a severe fit of coughing at 9 p.m. Less than half an ounce of expectoration, which contains very few bacilli, one to five per field in the last four days.

*Seventh Injection*—0.06 c.c. Jan. 23rd. Temperature at 12 p.m.  $101\frac{1}{2}^{\circ}$ ; before this rise of temperature he had a severe fit of coughing, some epistaxis, and profuse perspiration.

*Jan. 25th.*—No injection. Temperature above  $98\frac{1}{2}^{\circ}$  all day, rising to  $101^{\circ}$  at 2 p.m. He feels very much out of sorts. Complains of pain in right mammary region on coughing and on inspiration. No friction here, but the râles are more moist and are increased in number. An occasional crackling râle is heard at the base of left lung. Expectoration half an ounce, mucopurulent. Bacilli are very much increased in number.

*Jan. 27th.*—No injection. Temperature during the last two days has been somewhat elevated, ranging from  $99^{\circ}$  to  $100\frac{1}{2}^{\circ}$ . The face has a flushed appearance, the appetite is poor, and he feels ill. Some epistaxis last night. Sputa half an ounce. Two to four bacilli per field.

*Eighth Injection*—0.08 c.c. at 11 p.m. Jan. 28th. Temperature  $102\frac{1}{2}^{\circ}$  at 10 p.m. This afternoon, about three hours after the injection, he complained of feeling chilly. Had a violent fit of coughing in the

evening, with a feeling of nausea and epigastric uneasiness. Was unable to eat anything. At 9.30 p.m. had a chill, with severe epigastric pain. Had gr.  $\frac{1}{4}$  of morphia at 11 p.m. followed by relief. Two and a half ounces of sputa; bacilli are very scarce.

*Jan. 29th.*—No injection. Temperature ranges from  $99^{\circ}$  to  $101^{\circ}$ . Has feeling of chilliness alternating with flushes of heat to-day. Urine normal. Two and a half ounces of muco-purulent expectoration, but scarcely any bacilli found in four slides examined.

*Jan. 31st.*—No injection. Temperature  $99^{\circ}$  to  $101^{\circ}$  to-day and yesterday. Appetite poor; feels out of sorts and nauseated. No change in the physical signs.

*Feb. 4th.*—The temperature is gradually coming down, and he is beginning to feel as well as usual. Appetite is improving. Weighs  $113\frac{1}{2}$  lbs. Expectoration is about half an ounce in the twenty-four hours and contains very few bacilli. Rales are not so moist, and are less in number. Apart from this the physical signs are the same.

*Ninth Injection*—0.009 c.c. at 11 A.M. Feb. 5th. Between 8 and 10 p.m. he complained of chilliness, coughed very much, and had slight epistaxis from right nostril. Temperature  $102^{\circ}$  at 10 p.m.

The following day he felt ill and out of sorts, his face being quite flushed at times. Temperature not above  $100^{\circ}$ .

*Feb. 16th.*—Since the 6th inst. the temperature is seldom above  $99^{\circ}$ . There are fewer moist râles to be heard, otherwise the physical signs remain the same. There is seldom more than half an ounce of expectoration in the 24 hours. Bacilli are present as before. His general appearance has improved since the last injection, and he now weighs 115 lbs., a gain of  $4\frac{1}{2}$  lbs. since the Koch treatment began.\*

*Tenth Injection*—0.009 c.c. Feb. 17th, at 2 p.m. At 8 p.m. he had a very severe fit of coughing, some epistaxis from right nostril, profuse perspiration, and a temperature of  $102\frac{1}{2}^{\circ}$ .

## CASE II.—Continued from p. 597.)

*Fifth Injection*—0.004 c.c. Jan. 19th. Temperature reached  $100^{\circ}$ . No other symptoms.

*Sixth Injection*—0.005 c.c. Jan. 21st. No reaction.

*Seventh Injection*—0.005 c.c. Jan. 23rd. Temperature  $100^{\circ}$  at 10 p.m. Half to one ounce of muco-purulent expectoration, which contains from five to twenty bacilli per field; some of these are granular in appearance. These are also seen in clumps.

\* On Dec. 6th, 1890, his weight was 118 lbs.

*Eighth Injection*—.007 c.c. Jan. 25th. Temperature  $100^{\circ}$ . Otherwise his condition is the same. Half an ounce of expectoration both to-day and yesterday, which was slightly streaked with blood. Two to ten bacilli per field to-day, but yesterday there were as many as fifty in some fields.

*Jan. 26th.*—One ounce of expectoration, muco purulent, numullated, no blood, one slide containing scarcely anything but bacilli.

*Ninth Injection*—.008 c.c. Jan. 28th. No result. Two drachms of sputa containing two to twenty bacilli per field.

*Tenth Injection*—.009 c.c. Feb. 1st. No result. Bacilli are not quite so plentiful.

*11th, 12th and 13th Injections*—.01 c.c., .011 c.c. and .012 c.c. Feb. 3rd, 5th, and 13th. No reaction.

*14th, 15th and 16th Injections*—.013 c.c., .013 c.c. and .014 c.c. Feb. 10th, 13th and 17th. No result. Since the 5th inst. the temperature has been as high as  $100^{\circ}$  on three occasions. The physical signs remain the same, but he is improved in his general appearance and has gained 7 lbs. in weight since his admission. Expectoration is usually less than half an ounce in the twenty-four hours, and the number and character of the bacilli remain about the same.

*Feb. 21st.*—Patient having become discontented with the results of treatment, left the hospital.

### CASE III.—(Continued from p. 598.)

*Fifth Injection*—.003 c.c. on Jan. 19th. No reaction. Temperature  $99\frac{1}{2}^{\circ}$  at 8 and 10 p.m.

*Sixth Injection*—.004 c.c. Jan. 21st. Temperature  $99^{\circ}$ . Has a tickling sensation in his throat which causes him to cough more frequently.

*Seventh Injection*—.005 c.c. Jan. 23rd. Temperature  $99^{\circ}$  at 8 p.m. Was very restless last night, complaining of nausea and epigastric uneasiness. Has a slight attack of diarrhoea.

*Eighth Injection*—.006 c.c. Jan. 25th. Throat feels a little sore, otherwise no change. Temperature  $99\frac{1}{2}^{\circ}$ . Has gained  $4\frac{1}{2}$  lbs. in weight since the 16th inst.

*Ninth Injection*—.007 c.c. Jan. 28th. Temperature at 12 p.m.  $100\frac{1}{2}^{\circ}$ . His throat is more painful, especially on swallowing. Complains of nausea, and vomited after eating last evening. Examined this evening by Dr. Major, who found the swelling less and the ulcers diminished in size. There is no apparent change in his voice, and the physical signs in the lungs remain the same. The urine contains a small precipitate of urates.

*Jan. 31st.*—No injection since the 28th inst., but the temperature is persistently higher than usual since, being above  $99^{\circ}$ , reaching  $101\frac{1}{2}^{\circ}$  at times. Cough is very troublesome, with increased expectoration; no bacilli. Commenced using inhalation of Friar's balsam for the cough.

*Feb. 3rd.*—No injection since the 28th. Temperature has

remained above  $100^{\circ}$  since the 31st Jan. ; yesterday at 6 A.M. it reached  $104^{\circ}$ . No chills or pains in the limbs. Pulse also is increased in frequency.

Dr. Major found, on laryngeal examination, that the epiglottis was very much swollen yesterday, about  $\frac{3}{4}$  of an inch. Cough is very troublesome. Expectoration 20 oz. in the twenty-four hours, consisting chiefly of mucous and saliva ; no bacilli. Appetite is very poor ; cannot take solid food, as particles appear to get into the larynx and cause vomiting. Feels nauseated and has pain in the epigastrium at times.

*Feb. 4th.*—Temperature ranges from  $99^{\circ}$  to  $101^{\circ}$  to-day. His condition is much the same as yesterday. With the exception of a slight attack of diarrhoea, his bowels are constipated. No change in the physical signs in the lungs. Dr. Major finds the following conditions present this evening: Epiglottis more swollen, showing points of active disease. Arytenoid regions, inter-arytenoid regions, and aryteno-epiglottidean folds much more swollen. Ulcerative patches are numerous. The disease in the larynx is in a state of great activity.

*Feb. 6th.*—He still feels quite ill ; complains of soreness of the throat ; appetite is very poor, and he suffers from nausea, with vomiting at times. Cough is very frequent and distressing, accompanied with 15 to 25 oz. of expectoration, consisting chiefly of saliva and clear mucus. Is very restless and unable to sleep at nights. Dr. Major finds the following conditions present: Epiglottis still very much swollen ; the arytenoids and their neighborhood very much swollen. The ulcerated appearance of two days ago is diminished. On oesophageal side of inter-arytenoid space is a large patch of ulceration.

*Feb. 13th.*—All the above-mentioned symptoms have been gradually subsiding and he is able to be up and about, though feeling very weak, having lost 12 lbs. in weight since Feb. 1st. The temperature rises to  $100\frac{1}{2}^{\circ}$  every day. The physical signs remain the same in the lungs. Dr. Major finds his throat in the same state as when admitted. The patient left the hospital to-day.

## Retrospect Department.

RETROSPECT OF THE PATHOLOGY OF  
PNEUMONIA.

BY F. G. FINLEY, M.D.,

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For some years the view that pneumonia is a specific disease has been gradually, but surely, gaining ground, and this view has been strongly supported by bacteriological researches. The great majority of cases, if not all, of acute lobar pneumonia are associated from the first with the presence of the *diplococcus pulmonica* of Fränkel. Netler found it in fifty consecutive cases of this disease, whilst Weichselbaum found it in 81 out of 88 cases. Netler\* has carefully collected all the known facts of this organism, with a full bibliography. As the name implies, they are usually grouped in pairs, although sometimes single, surrounded by a capsule, each element being somewhat oval-shaped and the extremity tapering off like a lancet. In advanced cases of the disease, or after cultivation on solid media, the capsule may be absent, but it persists after cultivation in fluids. At times, especially in cultures, the cocci are grouped in chains of five or six elements like streptococci. Cover-glass preparations are readily stained by gentian violet or Fuchsin in aniline water. They are not decolorised by Gram's solution, and are thus readily distinguished from the pneumo-bacillus of Friedlander. A temperature above 25°C. is required for their development, the most favorable being from 34 to 39°C. Gelatinised serum faintly alkaline, bouillon, and solidified serum from suitable media. In the first of these, between the higher temperatures, colonies appear in about sixteen hours as rounded transparent islets, seldom over 1 mm. in diameter. After six or seven days they fail to grow if transplanted. Inoculation of the pure cultures in the subcutaneous tissues of the mouse or rabbit usually cause death in from twenty-four to forty-eight hours, the spleen being much swollen and the blood dark and fluid. Post-mortem, the encapsuled pneumococci are found in the blood

\* Arch. de Medic. Exp., 1890, 5, 6.

and tissues. Injections into serous membranes produce fibrinoplastic exudations, and if the lung is touched, hepatization of both sides occurs. The guinea-pig has a high power of resistance to the organism, and the dog and sheep a still greater.

Temperatures over  $40^{\circ}\text{C}$ . ( $104^{\circ}\text{F}$ .) diminish and then arrest the virulence of the organism, whilst, on the other hand, successful inoculations have been performed after exposing cultures to the temperature of an ice-house for several days. Desiccation does not destroy their virulence, so that the poison may be readily spread by dried sputum. Cultures on solid media usually prove innocuous after the seventh day. In fluid media the virulence is retained longer, and it is greatly increased by passing through the rabbit.

An application of these facts explain the limited duration of the disease, and it has been shown that the period of the crisis corresponds with the loss of virulence of the pneumococci, whilst cultures do not succeed after defervescence. The organism is found not only in primary but also in the secondary lobar pneumonias of scarlatina, typhoid, and influenza. It is also present in some few cases of lobular pneumonia.

The pneumococcus has been found in the saliva and nasal fossæ of healthy people, but it is much more frequent in the mouths of those who have had the disease, and this probably explains the tendency to recurrent attacks. The pneumococcus in the saliva is much more virulent, not only during an attack, but also during epidemics of the disease, and becomes harmless during defervescence.

A certain amount of diagnostic value may be attached to the presence of the pneumococcus in the sputum, provided they are present in large numbers and surrounded by a well marked capsule. The pneumococcus plays an important part in the complications of the disease. It has been found in the associated pleurisy, pericarditis, nephritis, peritonitis, meningitis, otitis media, etc. In grave cases it may be found in the blood and in the vegetations of ulcerative endocarditis, of which pneumonia is a not unfrequent cause.

Apart from pneumonia, the organism may exist in the above



affections, and it probably causes one-fifth of the cases of empyema in the adult and over half in the child. It may be suspected if the pus is viscid, greenish, and does not separate readily into serum and plasma. This form of empyema may be cured by simple puncture, and is much more favorable than that due to streptococci, owing to the limited duration of the virus. Being, however, in a fluid medium, a pleurisy lasts longer than a pneumonia.

Pasteur recognized the diplococcus in the saliva of a case of hydrophobia.

Of other bacteria, the diplococcus of Friedlander, together with streptococci and staphylococci pyogenes aureus and albus are found chiefly in the so-called catarrhal pneumonias, and are sometimes present with the diplococcus of pneumonia. Friedlander's pneumo-bacillus is a possible exciter of lobar pneumonia in a small number of cases. The pneumobacillus resembles the pneumococcus closely in its microscopic characters. It is enveloped in a distinct capsule, which is absent in cultures. Usually single, it may, however, occur in pairs; one diameter is greater than the other, and this is much more apparent in bouillon cultures, so that it may be classed with the bacilli. It is distinguished from the pneumococcus by being decolorised by Gram's method, by its virulent action on guinea-pigs and mice, but having no effect on rabbits, and, lastly, by its character in cultures.

## QUARTERLY RETROSPECT OF GYNÆCOLOGY.

BY T. JOHNSON-ALLOWAY, M.D.,  
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*Laparotomy.*—Dr. Bantock, in speaking of antiseptics in abdominal operations, states that the patient gets a bath by a competent nurse just before the operation. For instruments, sponges, ligatures and towels he uses boiled water; his hands and arms are well scrubbed. He makes a short incision (three inches long). In tying the pedicle, he secures the outer fold of the broad ligament with a separate ligature by going in nearly an inch from the outer edge with his needle and tying down on this before transfixing for the main ligatures. He employs this precautionary ligature because he had lost some cases by slipping of the outer edge of the pedicle, causing fatal secondary hemorrhage. Since employing this ligature he has not lost a case. The use of this ligature, suggested by Dr. Bantock, must be of undoubted service in obtaining security from hemorrhage, especially in cases of broad ligament cysts, where considerable thickness of muscular tissue must necessarily be included in the transfixing ligature. Dr. Bantock speaks of the use of hot salt-water for flushing the abdominal cavity when necessary. The proportion of salt is seven parts to one thousand of hot water, and he speaks of the method as a "true indirect transfusion." Dr. Bantock uses the drainage-tube in cases where there have been many old adhesions broken down, where he has had to apply many ligatures, and, consequently oozing afterwards. If the contents of a sac ruptures, or if he finds filthy fluid in the abdominal cavity, he always irrigates the cavity with several gallons of hot salt-water. He does not approve of pressing sponges firmly against the peritoneum to absorb fluid of any kind, but irrigates instead. For ligatures for everything except the pedicle, he uses three sizes of the best silkworm gut; for the pedicle, silk only. He does not allow his patients anything to eat for twenty-four hours before the operation, and gives nothing for twenty-four hours afterwards. Water is also withheld. In cases of bilious vomiting, he gives fifteen grains of carbonate of

soda in three ounces of hot water. This relieves every time. He gives no opium to relieve pain, because, having given the bowels nothing to do for twenty-four hours before the operation and twenty-four hours of abstinence following it, they remain collapsed and quiet without the aid of opium.

*Some Points in the Morbid Anatomy of the Fallopian Tubes.*

—DR. F. W. N. HAULTAIN of Edinburgh publishes an interesting paper on this subject in the *Edinburgh Medical Journal*, December, 1890. After describing the anatomy of the tubes, Dr. Haultain points out the fact that the tubes are attached to the peritoneum by a very delicate and loose connective tissue, and that the serous covering can easily be stripped off. The lumen of the tube being continuous on the one hand with the cavity of the uterus, and on the other with the interior of the peritoneal sac, affords the only example in the body of a direct continuity between a mucous and a serous lined space. From this continuity of its lumen with the endometrium, inflammatory disease of that organ can be carried directly to the ovary and peritoneum. It may be inferred, therefore, that an inflammation of the tube is generally secondary to that of the uterus. Dr. Haultain divides inflammatory diseases of the tubes into two varieties: 1st, *Endosalpingitis*; 2nd, *Interstitial salpingitis*. Of endosalpingitis, the inflammation may be catarrhal or purulent; the latter is being merely an aggravated stage and form, and the boundary line between them impossible to clearly define. The milder variety is the result of extension of ordinary non-specific endometritis; while the purulent type is due to the direct upward spread of *acute gonorrhoea*. Pyosalpinx is, however, undoubtedly the septic infection after labor, but is sometimes traceable as a complication or sequelæ of the zymotic fevers. When the lumen of the tube remains patent, the secretion is apt to escape into the peritoneal cavity and give rise to inflammation of the surrounding structures—perimetritis, periovaritis, and ovaritis. When the inflammatory process extends to the deeper structures of the tube, we have the second type before-mentioned, viz., *interstitial salpingitis*. At this stage of the disease we have much thickening of the submucous layers, giving rise to a

hard, thickened condition of the tube. As a rule, however, the muscular wall is unaffected. Dr. Haultain, however, does not mention the fact that Dr. Mundé of New York first drew attention to this condition of the tubes under the term *Pachysalpingitis*. The next lesion of the tube Dr. Haultain draws attention to in his paper is a very curious one,—*contortion of the tube*. This is a twisting or bending of the tube itself irrespective of inflammation or any other recognized or morbid condition. It causes most distressing symptoms to the patient, and is of more frequent occurrence than suspected. In many cases it may be associated with inflammatory disease, but by no means in all. The inflammation is always external to the tube, and is probably secondary, and it is to the contortion of the tube that we have to look for an explanation of the distress and other symptoms from which the patient suffered. The contortion, as a rule, is a spiral angular bending, so that on making a longitudinal section of the tube its lumen will be found appearing at different planes, here *cut* longitudinally, and there transversely, while at the angles it may be completely occluded from apposition of its mucous surfaces. On microscopical examination the structure of the tube will be found in every way normal, the epithelium in no way changed, while the peritoneum will be seen to run smoothly over its surface without dipping into the angles formed by the bending of the organ. The tube thus appears to be curled up between the layers of the broad ligament like a snail within its shell. The external surfaces of the walls of the tube will be found in some cases in close apposition, with almost no tissue between them; in others there may be some connective tissue; while in those cases associated with severe surrounding inflammation there will be found a considerable amount of inflammatory connective tissue. To the naked eye the tube looks shortened and thickened, but section of it shows this to be only apparent. One of the most serious conditions associated with this interesting malformation of the tube is sterility, as one would expect from occlusion of the tube at the angles of bending, proving an almost insuperable barrier to the passage of the elements of generation. The constant pain in the side which the

patient suffers at the menstrual period may be accounted for by the bending of an organ of such great vascularity as the Fallopian tube. As regards the etiology of this interesting lesion its cause is supposed to be developmental. Before birth the Fallopian tube is in an exactly similar state to the lesion now being considered—*i.e.*, it is twisted in a spiral manner—and it is not till puberty that, by a gradual process of straightening, it has acquired its normal undulating form, so that it is probably a continuance of the foetal state; but in the majority of cases it must be looked upon as a return to that condition, because the most frequent and best marked examples are met with in women who have previously borne children, and, curiously also, the large majority of examples of this lesion are found in women who date their sufferings from a past puerperal state. It is well known that the Fallopian tube during pregnancy undergoes a similar change to the uterus during that state, *viz.*, hypertrophy. This hypertrophy is almost altogether one of elongation, the tube at term being from six to eight inches in length, instead of four or five inches, as in the unimpregnated state.

From these interesting observations one may naturally infer that if involution of the tube be imperfect or irregular, twisting of it will be the result, its loose attachment to the layers of the broad ligament offering little or no resistance to the tube curling up between them. Dr. Haultain admits that this angulation of the tube in some cases is directly caused by the dragging of peritonitic adhesions, but that in many cases no such adhesions can be found. Dr. Haultain relates a few cases of pyosalpinx and other dilated conditions of the tube, where this angulation spoken of prevented fluid from passing into the uterine cavity and thus caused sacculation of the tube, a condition so often met with. The curling of the tube also accounted for the series of loculi which one frequently finds a dilated tube to be made up of. In conclusion, Dr. Haultain summarizes thus:

1st, That simple contortion of the tube is an extremely common condition.

2nd, That it manifests itself as a spiral angular bending.

3rd, That it may occur independently of any inflammatory or other apparent morbid change.

4th, That when associated with surrounding inflammation, it is more probably the cause than the result of that process.

5th, That it is either congenital or acquired, the former a maintenance of the normal foetal condition while the latter is frequently the result of subinvolution after parturition.

6th, When associated with a secondary endo-salpingitis it disposes towards encysted pyo- or hydro-salpinx from retention of the secretion, and thus give rise to the loculated condition of many of these tumors.

Lastly, In itself it is sufficient to give rise to those stereotyped signs and symptoms of disease of the appendages, viz., sterility and premenstrual dysmenorrhœa.

I have reviewed Dr. Haultain's paper more fully than usual, because I think the subject is of the greatest importance to scientists in this branch of surgery, and because I think the author has handled the subject in a most masterly way. One or two points, however, in the paper will admit of adverse criticism. Dr. Haultain's views in regard to the etiology of contortion of the tube, in the majority of cases, is certainly difficult to accept without due consideration. In nearly all of the cases of contortion of the tube which the reviewer has met with, there have undoubtedly been peritoneal adhesions drawing the duplicated coils of the tube towards each other, and in this way causing the condition in question. It is, however, not an uncommon thing to find a wavy condition of the tube at the same time normal in all its conditions, and therefore unlikely to give rise to symptoms spoken of by Dr. Haultain. We cannot therefore accept, unconditionally, Dr. Haultain's fourth conclusion, that when contortion is associated with surrounding inflammation it is more probably the cause than the result of that process.

*Surgical Treatment of Uterine Myoma.*—This title forms the heading of a most interesting paper read by Mr. Lawson Tait at the annual meeting of the British Medical Association, July, 1890. Mr. Tait, in speaking of the removal of the uterine appendages for the relief of myoma, gives a series of 327 consecutive cases with six deaths, giving a percentage of mortality of 1.8 per cent., which he says is a mere bagatelle of

risk, and far less than the mortality of any other serious operation in surgery. The last series that he published consisted of 219 cases with 4 deaths, and of these 215 cases now alive have extended, with few exceptions, to a period of at least twenty months since the operation. He says that in the great bulk of these cases the process of cure begins at once and is practically completed within six months. This is true of at least 90 per cent. of the cases, whilst in about 6 per cent. of the cases the cure is protracted over a period varying from twelve to thirty-six months. Of the 321 surviving cases in the whole series there are only 5 complete failures, 1.5 per cent.; that is, cases where the symptoms have been in no way relieved, and where the tumor has gone on growing. Mr. Tait attributes this failure, not to the operation, but to the imperfect way in which it was done. Three by these failures had already been submitted to hysterectomy; in all, removal of the ovaries was found complete, but in all of them one tube had been incompletely removed. In speaking of this operation for the relief of the soft variety of myoma, Mr. Tait now thinks that the incomplete removal of the tubes has more to do with the failure of the operation than the intrinsic quality of the tumor. Mr. Tait says that at the time he had almost made up his mind that this operation was not applicable to the soft œdematous variety, in which it would prove a failure, but that of late years he has had cause to change his mind in this respect—that he now considers the operation as successful for the cure of the œdematous variety as for the hard multi-nodular variety. He says; “Looking over the list of cases in which I have performed hysterectomy, I think that the proportion of the cases where I have been unable to remove the appendages and had to complete by hysterectomy has been about four per cent.” This percentage does not include those cases of enormous tumor where he deliberately performed hysterectomy. Mr. Tait quotes an interesting feature in regard to the age of the patient having to do with the success or otherwise of the operation. That patients under 40 years of age, about 70 per cent. of the tumors entirely disappear; between 40 and 45, as a rule they do not entirely disappear, but

become markedly diminished, and after 45 the diminution amounts only to a shrinking. Mr. Tait alludes to the erroneous belief which exists in the professional mind that approach to the menopause gives anything like certain relief in cases of myoma, for no fewer than nine of his cases were upwards of 50 years of age at the time of the operation. Mr. Tait speaks of the existence of unsuspected intra-uterine polypi keeping up the hemorrhage for some time after the operation, until, in fact, they were extruded from the uterine cavity. In regard to a statement made by Dr. Thomas Keith that insanity followed the operation of hysterectomy in about 10 per cent., Mr. Tait states that he has done hysterectomy in a much larger number of cases than Dr. Keith, and has not known a single case of insanity to occur in his practice, although liable to occur after the most trivial operations in surgery. In speaking of the relative value of surgical operations for the cure of disease, he says that it would be very difficult to bring forward instances in which a higher value could be attained by any other operation than the one in the present instance. The operation not only relieves, but permanently and completely cures the disease against which it is directed, and that it must be admitted as one of the most brilliant additions to modern surgery of which we have any knowledge. Mr. Tait does not believe that the removal of the ovaries has anything whatever to do with the arrest of menstruation. Menstruation is rhythmical in process, and is governed by a special nerve mechanism. Ovulation is not rhythmical, and is not therefore governed by nerve influence more than any other gland function. Mr. Tait attributes success in this operation to the complete removal of the Fallopian tubes only, and that he believes the efficiency of the operation consists in the destruction of a nerve which lies between the tube and round ligament of the uterus, and that this nerve governs the periodicity of the phenomena of menstruation.

*Modern Abdominal Surgery.*—Sir Spencer Wells delivered the Bradshaw lecture on this subject at the Royal College of Surgeons, Dec. 18th, 1890. Sir Spencer takes up first anaesthesia. He states that he has always felt afraid of chloroform,



it being the only anæsthetic he has ever seen a death from, and wonders why his brethren still use it. He speaks favorably of the use of bichloride of methylene, which he has used with confidence for years.

*Drainage.*—After alluding to its first introduction by Peaslee in 1855 Sir Spencer states that in his own work he has always looked upon drainage as a practice to be avoided if possible, and only uses the tube when he has not been able to thoroughly cleanse the peritoneum, or thought that some oozing was likely to go on after the incision was closed; or when, some days later, he had reason to suspect the presence of fluid in the cavity. He thinks that the tube acts as an irritant and leads to the formation of fluid which it serves to remove. As late as 1855, after an experience of 300 recent cases, he maintained that it should be "almost entirely discarded." He says the explanation consists in the fact that under antiseptic precautions, as practised now, fluids in the peritoneal cavity do not decompose as they did formerly, therefore they are absorbed and are quite harmless. Sir Spencer is also opposed to the flushing or washing out of the peritoneal cavity, and is in strange contrast in this respect to his London colleague, Dr. Granville Bantock. Sir Spencer alludes in his paper somewhat extensively to Metchnikoff's phagocyte theory, by which the animal body protects itself against the ravenous attacks of bacteria, showing how Ruffer's recent investigations brought to light the destruction of microorganisms by amoeboid cells. This is a subject that every one is familiar with now, and is dealt with by Sir Spencer in somewhat an exhausted way in his paper.

In speaking of ovariectomy, Sir Spencer states that he has performed this operation twelve hundred and forty-nine times upon twelve hundred and thirty patients, and that in a little more than thirty years there have been thirteen hundred and seventy-eight cases of ovariectomy done in the Samaritan Hospital with a mortality of 14.13 per cent., and that in the last four years two hundred and fifty-nine cases have been operated upon with a mortality of 4.4 per cent. In speaking of uterine tumors the lecturer quotes that well known dictum of Dr. Keith's: "So

strongly do I now feel on this subject that I would consider myself guilty were I to advise my patient to run the risk of her life before having given a fair trial to this treatment (electricity). Even though I were sure that the mortality would not be greater than that which hysterectomy has given me in my private cases—under four per cent.” He goes on to say that Dr. Keith informed him that he had, since writing the above, done but three hysterectomies, and for fibrocystic tumors only.

In speaking of Battey’s operation or oöphorectomy, Sir Spencer speaks very feelingly in regard to the suspected abuse that this operation has been put to, and cautions the profession to have regard to it from a moral as well as well as from a therapeutic standpoint, but he says that it has proved undoubtedly useful in properly selected cases of innocent uterine tumors.

In treating of the subject of *myomectomy* and *hysterectomy*, he says that in England the extra-peritoneal treatment by pin and serre-nœud, by elastic ligature, or the clamp, has so far yielded better results than the intra-peritoneal ligature. In Germany the reverse is the case, and I cannot help thinking that, as in ovariectomy, the clamp at one time gave better results than the ligature, but gave way to intra-peritoneal methods, as it will be with myomectomy. This will, of course, involve improvements in the mode of applying the ligatures, which will no doubt be suggested. He goes on to say that the principle he first insisted on of uniting not only the *edges* but the flat *surfaces* of the peritoneum when closing the opening in the abdominal wall after an ovariectomy became of even greater importance in closing the uterine wound in Cæsarian section and the divided edges of the peritoneal coat of the uterus in myomectomy. Sir Spencer Wells mentions two cases wherein he performed myomectomy and adopted the same method of suturing the uterine wound that Sänger does in Cæsarian section (treating the pedicle intra-peritoneally). Both these cases were successful. Sir Spencer now goes on to speak of Cæsarian section and Porro’s operation. Before 1865 Cæsarian section was a very fatal operation, few mothers or children being saved. Porro’s amputation certainly lowered the mortality, but did not bring it below

56 per cent. in regard to the mothers. Sir Spencer speaks of the great advantage of the Säger-Leopold method of doing Cæsarian section, which has recently given a mortality—five per cent.—almost as good as average ovariectomy. Surely this is a result of which modern surgery may be justly proud. The reviewer knows of four consecutive successful cases of Cæsarian section performed recently by Dr. Howard Kelly of Baltimore, under the Säger method. Sir Spencer Wells concludes his oration by alluding to the surgery of the spleen, liver and gall-bladder, operative surgery of the kidney, and enterectomy.

*Plastic Operations on the Perineum.*—Dr. Alexander Duke of Dublin describes in the *Dublin Medical Press* his new operation for the repair of a lacerated perineum. The operation consists in passing a long, straight, double-edged bistoury through the tissues of the perineum in front of the anus, at right angles to the vulva, and guided by the finger in the rectum penetrates the septum for two and a half inches upwards, and laterally the wound is enlarged to two inches as the knife is withdrawn. On the points of this incision being pressed together a lozenge-shaped opening will be formed. The sutures are introduced by a strong sickle-shaped handled needle with the eye near the point. Silver wire is used. The sutures are removed in ten days. The parts are also supported by straps of adhesive plaster carried from hip to hip. Dr. Duke sums up as follows regarding his operation :

1st, The simplest of performance as yet proposed ; no danger of hemorrhage, the surface, when dry, being brought together.

2nd, No danger of sepsis, as the incision is not open for the admission of any discharge from either vagina or rectum during the healing process.

3rd, No loss of tissue, and consequently no harm done should the operation fail.

In commenting upon this operation of Dr. Duke's, I must say that it is simply the flap-splitting operation of Mr. Tait with this difference, that Dr. Duke uses a knife, whereas Tait recommends the scissors. It is evident also that the septum cannot be split either as carefully or as efficiently with the knife as with the

scissors. The best method to adopt in splitting the septum in this operation is to commence with the scissors and continue the separation of tissue with the thumbs, occasionally dividing old cicatricial bands with the scissors when encountered. An important element in all methods of the flap-splitting operation appears to me would be difficult to obtain by Dr. Duke's method. I allude to the necessity of the splitting of the septum high up along the borders of the vulva in order to bring the torn muscles and fascia well together when the sutures are tied. In this way only can we obtain reparation of the pelvic floor and perineum. In regard to Dr. Duke's conclusion, I would say—

1st, It is not well to suggest that certain operations are very simple, because its the surest way to have them abused. As regards hemorrhage, surgeons do not generally regard it as a danger in this operation.

2nd, As regards the danger of sepsis, all flap-splitting operations upon the perineum are exempt alike from infection from discharge from vagina or rectum.

3rd, In all flap-splitting operations it is understood that there should be no loss of tissue. Dr. Duke does not say whether his operation is done under irrigation or not; also, I would suggest the employment of silkworm gut instead of silver wire as a suture material in all perineal operations. It is more easily and rapidly worked than any other suture, and can be rendered absolutely aseptic by a proper mode of preparation.

*Repair of Recent Laceration of the Perineum.*—Dr. Hunter Robb of Baltimore writes a paper in the *Johns Hopkins Hospital Bulletin* for December last upon this subject. Dr. Robb uses silk or silkworm gut as sutures. He begins at the upper angle of the wound and introduces the needle an eighth of an inch from the margin of the tear of the vaginal mucous membrane, bringing it out at the bottom of the rent, at a point much nearer to the operator than the point of entrance, and reintroduces it at the bottom of the tear, bringing it out on the opposite side at a point corresponding to the original point of entrance. The object of passing the sutures in this manner is to pull up the floor of the rent as high as possible. These vaginal sutures are

tied at once from above downwards. Two or three superficial perineal sutures on the outside completes the operation. Dr. Robb gives some very useful hints on the after-treatment of these cases, and especially alludes to the fact that it is not necessary for the patient to lie motionless upon her back, but be allowed to turn gently from side to side. The parts are dusted frequently with iodoform and boracic acid powder, and the urine is withdrawn with a catheter if necessary. Vaginal irrigation is only carried out in cases of decomposition of the lochia. The sutures are removed from in from seven to nine days. Dr. Robb speaks of the more extensive tears, especially those which go through the sphincter, splitting up the septum. These latter tears he advises being reduced to a simpler form by a series of superficial sutures passed on the rectal surface and tied in the rectum. The remaining tear can then be closed as already described.

The reviewer admires Dr. Robb's ingenious method of repairing the recently lacerated perineum, but he mentions in his paper the fact that Dr. Emmet has well said, "Any rupture round the vaginal outlet takes the drawing-string out of the bag and lets the pelvic viscera drop out." Now the replacing of this very drawing string would be apparently all we require to make things again perfect, and if Dr. Robb will refer to the reviewer's article on Perineorrhaphy in *Buck's Reference Handbook of Medical Sciences*, Vol. V, he will there see that the recently torn perineum can be efficiently repaired by the use of one suture only, and that this one suture, when properly placed, acts as the true drawing-string spoken of by Dr. Emmet. This one-suture method lifts the pelvic floor more perfectly and solidly than other methods, in virtue of its having the central point of the perineum for a supporting pillar, around which the suture runs. Functionally, this suture not only lifts the pelvic floor to its normal height, but it also shortens the posterior vaginal wall, upon which depend good after results in all cases of perineal lacerations. The old adage quoted by Dr. Robb, "A stitch in time saves nine," applies most adroitly to my operation. Dr. Robb's excellent paper is illustrated by numerous ingenious drawings to demonstrate his method. A careful study will well repay those interested in this subject.

*Hæmatoma of the Ovary.*—DORAN reports the following case in the *Transactions of the London Obstetrical Society*. A patient was admitted to the Samaritan Hospital six months after a sudden attack of pain in the right side of the abdomen. A round, elastic, and freely movable tumor was observed. Mr. Thornton performed laparotomy and removed the right ovary enlarged to the size of a small orange, in the centre of which was found a hard blood-clot. This was an example of follicular hemorrhage described by Winckel and Olshausen. BOLDT reports a case of a similar nature, where he performed laparotomy for peritonitis due to the rupture of hæmatoma of the ovary. This patient stated that on the day preceding the first examination she had been seized with a sudden pain in the left ovarian region and at once became unconscious. There was general pain in the abdomen and frequent vomiting. Temperature  $103.7^{\circ}$  and pulse 120. Vaginal examination was negative, but it was thought that a pyosalpinx had ruptured. On opening the abdomen, nearly a quart of fluid and coagulated blood was removed from Douglas's pouch. The left tube and ovary were removed. The patient recovered. The specimen showed a normal tube and a large ovary, on the posterior surface of which was a ruptured hæmatoma.

Hæmatoma of the ovary would appear to be more common than generally suspected. The reviewer has had two cases within the last six months, where, in one case, the blood-clot had converted the ovary apparently into a mere shell, but had not been ruptured until its removal at the operation. In the other case the blood-clot was the size of a filbert, hard and fawn-colored, and was also expressed from the ovary during its removal. In both of these cases the patients were young, and laparotomy was undertaken to relieve constant pain.

*Salpingo-Oophoritis.*—LEBEDEFF has observed that after repeated examinations of patients with suspected tubal disease he was able to demonstrate at one examination a well-marked enlargement of the tube upon one side, while at a subsequent examination nothing could be felt but an ill-defined cord. It was found that at the beginning of menstruation the distended

tube became larger, that toward the end of the period it diminished in size, and became absolutely collapsed at the cessation of the flow. This increase in size is explained not only by the general periodical congestion of the pelvic organs, but also by the fact that the mucosa of the tube becomes swollen at this time, and a certain amount of blood may escape into its interior; also, there may be a fresh secretion of fluid into the tube. The reviewer has repeatedly been able to determine enlargement of the tubes, but required in all cases the aid of an anæsthetic. The necessity for an anæsthetic during the examination in these cases is due to the extreme sensitiveness of the parts and the inability to conduct the examination satisfactorily without the patient being in an unconscious state.

*Cancer of the Cervix Uteri.*—PAWLIK has reason to propose an operation for the free extirpation, by the vaginal method, of the neck of the uterus when the seat of malignant disease, and of the perimetral connective tissue along with the diseased parts of the uterus. The operation consists in the free use of the knife upon those lateral tissues in which the disease usually spreads before it extends from the cervix to the body of the organ. Incidental to this operation are Pawlik's studies in regard to catheterism of the ureters, which confirm the views already pronounced by that surgeon, that the free removal of the infiltrated tissues may be accomplished without injuring the ureters. This operation of Pawlik's may obtain some place in uterine surgery, but we feel the difficulty of catheterizing the ureters by an unpractised hand will lead to many unsatisfactory cases from injury to the ureters during the operation. Pawlik himself embraces every opportunity to practise the catheterization of the ureters, for he finds that only in that way can he obtain his remarkable dexterity. It is evident from this that the average operator may not at once succeed in following his example without a guide in the ureter, it would certainly be unsafe to attempt the radical removal of connective tissue surrounding the diseased cervix, and impossible to determine whether the ureters were not themselves involved in the disease.

*Ignipuncture in the Treatment of Lacerated Cervix Uteri.*—DR. ALEX. DUKE (*Brit. Med. Journal*) describes a method of his in the treatment of hypertrophied cervix uteri, whereby the cervix is punctured in several places by a thermo-cautery needle or instrument with a fine point. Dr. Duke states that any one can do this, even with a heated copper rod through a cylindrical speculum. He has found ignipuncture of considerable value in lacerations of the cervix, when hardly bad enough to demand Emmet's operation.

The reviewer does not agree with Dr. Duke in the off-hand, light treatment of female patients by such methods. Ignipuncture of the cervix has been tried years ago by French surgeons and has been found not only to have made the part operated upon much more cicatricial than it was before, but has been the cause of septic inflammation in many cases. The reviewer would therefore caution against this procedure, and advise instead the performance of Emmet's or Schroeder's operation as a more surgical and safe procedure.

*Endoscopy of the Female Urethra in Gonorrhœa.*—JANOVSKY (*Wiener Med. Presse*, Sept. 7, 1890) has practised endoscopy in a large number of cases of gonorrhœa in the female, and has thus added considerable to our knowledge of the pathology of the disease. Examinations during the acute stage are difficult without the aid of cocaine. Acute gonorrhœa may be circumscribed or diffuse; the mucous membrane is much swollen with collections of pus between the folds; the walls are covered with small abscesses, and Skene's lacunæ contain pus in which gonococci can always be found. Erosions and circumscribed hemorrhages are frequent.

*Gonorrhœal Salpingitis.*—MERGE (*Med. Anzeiger zum Centralblatt für die Ges. Med.*, Sept. 13, 1890) in his bacteriological examinations of the contents of the tubes from twenty-six cases of pyosalpinx, was able to demonstrate the presence of micro-organisms in eight instances, Neisser's coccus being found in three specimens of pus only. It is denied by some that contact of gonococci with the peritoneum can produce a special variety of peritonitis since only cylindrical epithelium is vulner-



able as regards these micro-organisms. Koch considers the question as still unsettled. If, however, gonococci are found in pus within synovial cavities (serous membranes), it is possible that the peritoneal cavity may contain similar pus. The probability is that the specific cocci have existed, set up their specific inflammation, and disappeared.

*Kraurosis Vulvæ* is a term given to a peculiar affection described by Orthmann (*Zeitschrift für Geburtshilfe und Gynäkologie*, Bd. XIX, Heft 2). He reports five cases of this peculiar form of atrophy of the pudenda, described first by Breisky. The latter describes the condition as an atrophy of the skin covering the external genitals, giving rise to fissures in the soft parts. The introitus becomes much narrowed. Microscopical examination of the affected skin shows that there are retrograde changes in the upper layers of the corium, causing sclerosis of the papillæ; the rete being so thin in many places that the horny epidermis rests directly upon the papillæ. Sweat and sebaceous glands are absent. Regarding the etiology of this peculiar affection nothing is known. Medical treatment is useless. Blenorrhœa is supposed to be a prominent etiological factor. In Orthmann's cases there was excessive itching and burning, while in those of other observers this symptom was rarely present. All the cases presented the characteristic appearances described by Breisky—smoothness, dryness and cicatrization of the skin, atrophy of the labia, and stenosis of the introitus. With regard to the treatment, Martin excises the diseased parts *in toto*, and obtains good union of the wounds and complete relief of the distressing irritation without recurrence. Cases were reported by Schroeder and Küstner, in which obstinate pruritus vulvæ was similarly treated with good results, but kraurosis has never before been treated surgically.

## Reviews and Notices of Books.

### Differentiation in Rheumatic Diseases (so-called).

By HUGH LANE, L.R.C.P., &c., Hon. Medical Officer to the Royal United Hospital, Bath. London: J. & A. Churchill, 11 New Burlington street. 1890.

The author, in conjunction with Mr. Charles T. Griffiths, has made a careful enquiry into the very numerous cases of rheumatic diseases (upwards of 3,000) which have come under his observation, with the result that he considers that there is an intimate causative relation between struma and rheumatoid arthritis. Osteo-arthritis is not synonymous with rheumatoid arthritis, but is looked upon as its terminal stage. Rheumatic arthritis, on the contrary, is never followed by osteo-arthritis, and is considered to be always of rheumatic origin. In the author's extensive experience, he has found cod-liver oil and similar nutritives of great efficacy when given in the early stages of rheumatoid arthritis. This is considered additional evidence of the close connection between this disease and scrofulous affections.

### On Some Urinary Disorders connected with the Bladder, Prostate and Urethra. By REGINALD HARRISON, F.R.C.S., Surgeon to St. Peter's Hospital for Stone. London: Balliere, Tindall & Cox. 1890.

This small work consists of six lectures delivered at the St. Peter's Hospital during last year. They are written in the author's usual lucid and pleasant manner, and are very practical, being the result of a large hospital and private experience. The details of operative treatment, early and advanced, are given, and his own operation of puncturing the perineum and introducing a rubber tube for permanent drainage is described. Hæmaturia, stone in the bladder, the therapeutics and hygiene of the bladder, each take up one lecture. Mr. Harrison's views, which are so well known, are shortly and ably described in these lectures. Everything he writes on diseases of the bladder is

well worth reading. Surgeons and general practitioners will welcome the publication of these lectures.

**Sterility in Women, including its Causation and Treatment.** By ARTHUR W. EDIS, M.D. London: H. K. Lewis, 136 Gower street. 1890.

This very classical little work is a reproduction of a portion of Dr. Edis' "Manual of Diseases of Women," first published in 1881. There are some additions and cases recorded illustrating the methods of treatment both in primary and acquired sterility. The work is certainly very complete, and should be read by every practitioner. The pathology, however, of pelvic disease, especially that relating to the ovaries and Fallopian tubes, has so much changed of late, that the so-called mechanical treatment of dysmenorrhœa and sterility has lost ground to a great extent; more especially has this become evident with regard to the use of the sound and gradually-dilating tent, both of which have now become practically obsolete.

**Epilepsy, its Pathology and Treatment.** By HOBART AMORY HARE, M.D., B.Sc., Clinical Professor of Diseases of Children and Demonstrator of Therapeutics in the University of Pennsylvania. Philadelphia and London: F. A. Davis. 1890.

This essay was accorded a prize of four thousand francs by the Belgian Royal Academy of Medicine. It is a very good account of the nature (as far as is known), symptomatology and treatment of epilepsy. In a special work on epilepsy it is, we suppose, allowable and perhaps even expected of the author to mention all the drugs that have been at one time or another employed for its relief. This, however, serves no useful purpose. Dr. Hare mentions salicylic acid, strychnine and quinine as agents that should not be employed in epilepsy. We would be disposed to add to this list at least two of those agents that are recommended for the disease, viz., picrotoxine and atropine.

**Ointments and Oleates, especially in Diseases of the Skin.** By JOHN V. SHOEMAKER, A.M., M.D., Professor of Materia Medica, Pharmacology, Therapeutics and Clinical Medicine in the Medico-Chirurgical College of Philadelphia. Second edition, revised and enlarged. Philadelphia and London: F. A. Davis. 1890.

In the first part of this useful work we have a full and accurate description of the mode of preparation, administration and uses of the ointments officinal in the pharmacopœias of the United States, England, France, Germany, Austria, Italy and Spain. The second part deals with the pharmacy, pharmacology and therapeutics of the oleates. This edition has been prepared with great care, and will prove a valuable work of reference to all who are called upon to treat diseases of the skin.

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### Society Proceedings.

#### BATHURST AND RIDEAU MEDICAL ASSOCIATION.

The regular semi-annual meeting of this Association was held at Ottawa, on Wednesday, the 21st January, 1891. There were present Drs. Dixon (Pembroke), Mann (Renfrew), Groves (Carp), Preston and McEwan (Carleton Place), Wallace and Morrow (Metcalf), Easton and Agnes Craine (Smith's Falls), Church (Aylmer), McFarlane (Ashton), and a large number of the residents of the city.

The chair was filled by the President, Dr. A. F. Rodgers, Ottawa.

After a short address by the President, papers were read by Dr. W. C. Cousens—"Treatment of Membranous Croup."

Dr. H. J. Horsey—"Eye Disease in Syphilis."

Dr. L. C. Prevost—"Vomiting of Pregnancy."

Dr. D. O'Brien—"Ligature of Brachial Artery" (case).

On the first paper, the question of the diversity of croup and diphtheria was the point discussed. Drs. Cousens, Henderson, Wright, Mann, Preston, Horsey and Wallace believe them to be distinct diseases; Drs. Prevost, Robillard and Small were inclined to the opposite view, that they are forms of the same disease.

Dr. Horsey's paper reported two cases, and referred to the fact that syphilis as a cause was frequently overlooked.

Dr. Prevost grouped the stomach disorders in three classes—where the stomach is simply disturbed, where the disturbance is due to reflex action, and where the whole system is in a state of reflex irritation. The first and second classes are those in which the numerous remedies are used with a degree of success; in the third class the only remedy is to empty the uterus. He reported two cases of the latter.

In the discussion, Dr. Dixon stated that he had had most success with oxalate cerium in 8 or 10 gr. doses. He thought no one remedy was to be depended upon and none to be despised.

Sir J. Grant had had success when other remedies had failed by elevating the pelvis.

Dr. O'Brien presented a patient where the brachial artery had been tied for a traumatic aneurism at the wrist.

The meeting adjourned, to meet at Gananoque in June.

In the evening the visitors were entertained to a dinner by their city confrères.

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## MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

*Stated Meeting, December 19th, 1890.*

F. J. SHEPHERD, M.D., PRESIDENT, IN THE CHAIR.

*A Large Aneurysm of the Aorta.*—DR. JOHNSTON exhibited this specimen, which had been sent by Dr. Tunstall of Kamloops, B.C. The specimen showed a diffuse dilatation of the ascending and transverse portions of the arch of the aorta. Springing from the right side of the arch, immediately above the aortic ring, was a sacculated aneurysm rather larger than the fist. The orifice of the sac was about  $2\frac{1}{2}$  inches in diameter, and the sinus of valsalva was involved in the dilatation, so that the segment of the aortic valves, which were thick and stretched out laterally, lay across the edge of this space. The sac lay in close connection with the posterior wall of the right ventricle, which was very thin in places, the muscle apparently being atrophied from pressure. Between the muscle fibres the whitish

fibrous wall of the sac could be seen in places. Dr. Johnston wished to know if any set of symptoms or physical signs were known to be associated with aneurysm in this unusual situation.

*Chronic Calcifying Pericarditis.*—DR. JOHNSTON exhibited this specimen for Dr. MacDonnell. The autopsy showed considerable dilatation and hypertrophy of both chambers with universal adhesive pericarditis. Extending almost entirely round the base of the heart, in the auriculo-ventricular sulcus, was a calcified plate lying within the adhesion, evidently due to unabsorbed exudation. At one spot about a teaspoonful of thick, whitish, purulent fluid lay encapsuled between the adhesion and the heart wall. The calcareous plate was not firmly attached to the heart, but rather to the mediastinal tissue. It was evident, however, that it prevented the mitral and tricuspid muscular rings from properly contracting. The valve segments themselves were almost normal.

DR. R. L. MACDONNELL gave an outline of the history of the case. The patient had had scarlet fever in childhood. There were no heart symptoms until he had arrived to the age of 40, when he had begun to suffer from dyspnoea, præcordial pain, and dropsy of the feet. During his illness there had been severe attacks of epistaxis. In one of these, the posterior nares on the left side had been plugged. This operation had been followed immediately by acute otitis media ending in rupture of the drum membrane. There had subsequently been an attack of acute renal congestion with the passage of bloody urine. The liver and spleen showed signs of enlargement, and there were evidences of congestion of both pulmonary bases.

*Gonorrhœal (?) Endocarditis.*—DR. JOHNSTON showed the heart of a man, aged 34, a stone-mason, who had died in Dr. Molson's wards. There had been a history of repeated attacks of gonorrhœa, the last commencing two weeks before admission. At the autopsy the lungs showed extensive chronic bronchitis, with slight bronchiectasis; and multiple small fibrous nodules scattered throughout the lung substance, each being surrounded by a zone of black pigment. The heart was dilated and the muscle wall of both chambers somewhat thick. A large rough,

ragged, fibrinous vegetation was found at the base of the middle segment of the aortic valve; this was traced directly through the region of the membranous septum between the ventricles, and extended to the adjacent part of the tricuspid valve, upon which a similar vegetation existed; the intervening tissue was softened and necrotic. The remaining portion of the aortic and tricuspid valves seemed perfectly healthy. The other valves looked normal. The heart muscle showed no change beyond slight fatty degeneration of some of the fibres of the papillary muscles. No infarcts or abscesses were found anywhere in the body. The urethra showed some thickening near the meatus and about the bulb, but was free from all appearance of acute inflammation. The right ankle and both knee-joints were examined and found normal.

Dr. Johnston was surprised to find, on making cover-glass preparations from the vegetations on the valves, that on staining with watery fuchsine a number of small diplococci were found, having a strong resemblance to gonococci in size and shape. They further resembled gonococci in not staining by Gram's method, others differing from all cocci which Dr. Johnston had found in previous cases of endocarditis. They were not obtained in cultures in pure agar-agar. On the other hand, while they sometimes occurred in small groups, of which each pair of cocci was slightly separated from the neighboring ones, they did not lie in the substance of the cells when these were present. They also stained less intensely than gonococci in alcoholic methylene blue solution. Scrapings from different parts of the urethral mucosa did not show any gonococci or organism at all resembling them. None of the other tissues were examined for bacteria. Dr. Johnston did not believe these organisms were proved to be gonococci, as possibly the peculiar staining might be due to degenerative changes in some other diplococcus. Still, as a case had been reported where gonococci had been described as occurring in the vegetation, the similarity, if not identity, of these organisms to them was of importance. He had not had any sterilized human serum on hand at the time of making this autopsy, and had not hoped for positive results from the cultures in any case.

DR. MACDONNELL, who reported the case, remarked that the patient had been admitted to Dr. Molson's wards in the Montreal General Hospital, on December 12th, 1890, complaining of cough, dyspnoea, and sleeplessness. There was a history of intemperance; no history of syphilis, but he had on several occasions contracted gonorrhoea, and had twice been under the care of Dr. Molson for gonorrhoeal rheumatism. Six months ago the patient contracted a fresh gonorrhoea, which was followed by a fresh attack of rheumatism, the ankles, knees and wrists being affected. Apart from this affection he had not been in good health for some two months. He had lost weight, had shortness of breath and pain in the left side of the chest, and a distressing cough with free expectoration. He recovered from the attack of gonorrhoeal rheumatism, exposed himself afresh to contagion, two weeks before admission, and the discharge had returned with increased vigor. There is no history of rheumatism or scarlet fever. Parents were both alive. One sister died at nine months of convulsions, one at 14 years of an acute illness lasting but two days, and a brother died at 30 of inflammation of the lungs. The present illness began two weeks ago with cough and dyspnoea. On admission at noon, Dec. 12th, 1890, the temperature was  $102\frac{1}{2}^{\circ}$ , pulse 120 (weak), and respirations 48 (labored); cough distressing; deficient expansion on right side, with dulness on percussion and weak breathing over a considerable area at the back of both lungs from the angle of the scapulæ downwards, and mucous râles were heard over the whole back. Owing to the noisy breathing the heart-sounds could not be distinguished. Nothing was noted beyond accentuation of the second sound. Patient died suddenly at 3 A.M. next day (13th).

DR. BELL asked if the gonococci had been recognized outside of the genito-urinary tract.

DR. JAS. STEWART inquired if the joints had been examined in the present case for gonococci.

DR. JOHNSTON, in answer to Dr. Bell, stated that gonococci had been met with in cases of salpingitis and in gonorrhoeal arthritis. To Dr. Stewart's question, he had not examined the joints for gonococci, as they appeared perfectly normal.



*Case of Rhinoplasty.*—DR. JAS. BELL brought the patient before the Society and gave the following history: Five years ago, A. S., aged 25 years, lost the cartilaginous and soft parts of the nose, with the exception of a portion of the alæ at each side, from a destructive ulcerative disease said to have been lupus. An attempt was made in the London Hospital, England, to restore the nose by the Tagliacotian operation, the left forearm being used for this purpose, but resulted in a complete failure. On admission, portions only of the alæ were left of the nasal structures anterior to the lower extremities of the nasal bones. These were connected to the cheeks by large keloid cicatrices. The unsupported nasal bones had fallen down, so that the anterior edge of the vomer could be felt projecting between them. The inferior (free) margin of the vomer from which the triangular cartilage had been removed by the ulcerative process was covered by healthy mucous membrane. There was great redundancy of the upper lip, which was made more apparent by the spreading of the alæ nasi. The operation consisted in fitting into the gap described a section from the central portion of the upper lip. The edges of the gap were pared from above downwards, beginning at the centre. The mucous membrane was also pared from the free edge of the vomer. A section was then removed from the centre of the lip through its whole thickness, and about an inch in width at its free margin and three-quarters of an inch in width at the base of the flap. The flap was then turned upwards and fitted into the gap by making a cross section through the skin surface near the mucous edge of the lip and splitting it in both directions so that in its centre it was attached to the vomer, while externally the edges of the mucous surface were attached to the skin margin, the parings from which were reflected downwards and attached to the edges of the base of the flap, which formed the columna nasi. Union by first intention took place throughout, and an excellent result followed, with but slight shrinking of the implanted flap. In two months the mucous surface had become pale and resembled the skin so closely in other respects that it could only be recognized on careful examination.

*Plastic Operation for Severe Burn of Face and Neck.*—

DR. SHEPHERD exhibited a patient on whom he had operated for deformity of the neck and mouth, following a severe burn in infancy. The patient was 20 years of age, and when he entered hospital his chin and lower lip were fixed to the sternum, causing the whole head to be bent forward and obliterating the front of the neck. The burn had involved the greater part of the chest and also the sides of the neck and arms. The lower jaw, from continued tension of the scar, had been pulled forward and protruded several inches beyond the upper, giving the man a hideous appearance. Several operations were performed. The neck was first freed by a dissection which reached almost from ear to ear, and when granulation had been established, grafting after Thiersch's method was performed. The protruding lower jaw was then excised and the lip restored by Teale's operation. The result was good; the patient's appearance was much improved, and he could use his mouth.

*Removal of an Osseous Body from the Knee.*—DR. HINGSTON exhibited a fragment of bone which he had removed from the knee-joint of a young man. The symptoms were similar to those commonly met with when loose cartilages are present. An open incision was made and the substance removed. On examination, it was found to be distinctly bony in structure. Its dimensions were about one inch by half an inch.

DR. RODDICK asked if there was any history of injury.

DR. SHEPHERD remarked that the specimen looked like a fragment of bone sometimes found in gouty subjects.

DR. HINGSTON replied that there was no history of injury or gout.

*Chorea, its Relation to Rheumatism and Treatment.*—DR. G. A. BROWN then read a paper on this subject, which appeared in the February number of this JOURNAL.

*Discussion.*—DR. MACDONNELL considered the paper of practical interest. He referred to the great frequency of the rheumatic history, when looked for, in many cases of chorea. Rheumatism in children more frequently manifested itself by tonsillitis,

chorea, erythema, and various other manifestations of the rheumatic diathesis than by painful and swollen joints.

DR. JAS. STEWART had no doubt but that rheumatism had a marked influence in the induction of chorea. He considered, however, that there was another element which predisposed to chorea, and that was a condition of instability of the nervous centres.

DR. MILLS spoke of the causes of chorea in dogs. These were mainly reflex and, in his experience, not dependent upon organic disease.

DR. GURD had found the iodide of iron with arsenic very beneficial in the treatment of chorea.

DR. JOHNSTON remarked that he had only met with brain lesions in one case of chorea out of about ten examined in man and animals. This was a case where he had performed an autopsy for Dr. Jas. Stewart, and a number of small cysts had been found in each corpus striatum.

DR. HINGSTON had found ordinary chorea to disappear in seven or eight weeks without medicinal treatment.

DR. BELL thought that the name chorea was rather indefinite, that it was made to include many cases of a definite pathological lesion.

DR. BROWN, in his reply, stated that he had wished to show the close relationship between rheumatism and chorea, nevertheless admitting that other causes may enter into its production.

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*Stated Meeting, 9th January, 1891.*

F. J. SHEPHERD, M.D., PRESIDENT, IN THE CHAIR.

*Ruptured Tubal Pregnancy.*—DR. ARMSTRONG showed this specimen which he had removed from a patient aged 35. Her previous pregnancy, nine years ago, was followed by pelvic symptoms. She was then delivered of a full-grown child. In May last, the patient believed that she had had a miscarriage, as there had been a bloody discharge from the vagina for seven weeks. On the 5th April, five weeks after her

last menstrual period, whilst out walking, she was seized with severe pain and faintness, and had to be driven home. In two or three days she recovered sufficiently to be able to go about the house. On the 14th April she had another attack. On the 16th the patient felt better and went out, when she was seized with a third attack. Dr. Armstrong, who then saw the patient, found, on examination, the uterus pushed up and to the left. In the right side of the pelvis a large mass could be felt about the size of a cocoa-nut. The tumor extended above the brim of the pelvis, and could be detected by external palpation. There was a little bloody discharge from the vagina. The diagnosis was hematocele due to a ruptured tubal pregnancy. This was confirmed subsequently by Dr. Perrigo. The symptoms not being urgent, it was deemed advisable to await developments. The patient improved, and in a few days was up. She remained well until August, when chills and hectic fever set in, and the tumor felt considerably softer. On the 1st September Dr. Armstrong opened the abdominal cavity. The right Fallopian tube was ruptured and lay in the sac, which was filled with blood-clot. The sac was easily enucleated, and the tube ligatured and removed. The patient was now perfectly well. Dr. Johnston had examined the specimen, and found structures resembling chorionic villi. Dr. A., dwelling upon the etiology of the case, referred to her history of pelvic pain some nine years ago, when, possibly, there may have been desquamative salpingitis.

DR. WM. GARDNER remarked that these cases were far from rare, and that they were not always fatal. In the present specimen the sac was somewhat remarkable. He wished to know if there were any evidence of ovarian structure in the sac. He had frequently found what he believed to be the ovary expanded by blood-clot.

DR. JOHNSTON replied that the ovary was free from the sac.

DR. SHEPHERD wished to know what symptoms led to the operation.

DR. ARMSTRONG answered that from the softening of the tumor, together with signs of hectic fever, he had considered it advisable to operate.

*Tuberculous Arthritis of the Knee-Joint.*—DR. WYATT JOHNSTON exhibited this specimen. Sequestra of necrosed bone existed at the head of the tibia and the condyles of the femur. The opposing surfaces of these sequestra were very dense, and showed eburnation.

*Chalicosis.*—DR. JOHNSTON also showed the lungs of a stonemason. A large number of small, firm, fibroid nodules, the size of shot, were found beneath the pleura and throughout the lung substance. These nodules were gray in the centre, and were surrounded by a zone of black pigment. Analysis of the lung by Dr. Ruttan showed that 8.4 per cent. of the dried lung was composed of mineral ash, of which over 50 per cent. consisted of silica. Traces of iron were also present.

*Thrombosis of the Superior Longitudinal Sinus and left Renal Vein following Scarlatina.*—DR. JOHNSON exhibited this specimen for DR. ARMSTRONG. The patient, a female child, aged  $2\frac{1}{2}$  years, had died six weeks after the onset of an attack of scarlatina with broncho-pneumonia. A large, firm, adherent, darkened thrombus completely filled the superior longitudinal sinus, and extended into the adjacent central veins. The brain was perfectly normal. The left renal vein and its principal branches also contained adherent red thrombi. The ovarian veins were not examined.

DR. ARMSTRONG related the clinical history. The child was two years and a half old. It had been delivered with forceps, and from within a fortnight of its birth it had suffered from convulsive seizures, which had occurred from once to six times a day. Various modes of treatment, including circumcision, had been tried without effect. The parents had persisted in the belief that the forceps was to blame for the unhappy condition of the child. Death was caused by scarlet fever and broncho-pneumonia.

DR. MILLS said that it was difficult to see how forceps could affect the sinus. He thought that more than the blood must be taken into account to explain the convulsive seizures.

DR. JOHNSTON remarked that thrombosis in the veins of children was not uncommon, especially in the renal vein which probably extended from the spermatic vein.

*A Case of Abortive Typhoid Fever, with a Severe Relapse.*

—DR. J. A. SPRINGLE related the history of the case. The patient, a young man aged 19, had consulted him on the 25th September last, with unmistakable symptoms of typhoid of about the seventh or eight day of the fever. On the following day rose spots were observed, and on the tenth day of the illness there was retention of urine. On the morning of the eleventh day the patient was extremely jaundiced, but was feeling quite well. His temperature, which had ranged between  $100^{\circ}$  and  $102^{\circ}$ , had fallen to  $98\frac{1}{2}^{\circ}$ , and all the abdominal symptoms had disappeared. Retention of urine, however, persisted. This condition lasted until the end of the thirteenth day, when he recovered power over his bladder, and the jaundice gradually disappeared. His pulse and temperature had been normal since the eleventh day. His general condition was so much improved that he was allowed to partake of solid, though light food. He steadily improved, and on the seventeenth day was out for a short walk. On the eighteenth day he complained of not feeling well, and on the following morning presented all the symptoms of a severe relapse. For the first week of the relapse the fever ranged from  $100^{\circ}$  to  $105^{\circ}$ ; pulse 100 to 140, markedly dicrotic. The spleen was enlarged, and there was great iliac tenderness; vomiting was incessant for forty-eight hours. Towards the end of this week hemorrhage set in, small in quantity at first, but subsequently becoming very profuse. There was considerable abdominal distension. During the following week there was vomiting, retention of urine, and a slight diarrhoea, which lasted forty-eight hours. A profuse rose rash was observed over the chest. The tympanitis, hemorrhage and other graver symptoms subsided towards the end of the week. From the end of the third week the patient progressed favorably. The total period of the pyrexia for the relapse was thirty days. Dr. S. could not explain the coincidence of jaundice, furthermore than the patient had had fever and ague five years ago, and, since then, his skin had at times been discolored, but not of the decided tint observed in this illness.

DR. MACDONNELL considered this case an interesting one. That many cases of abortive typhoid were put down as febricula, he had no doubt. Jaundice in typhoid fever was not rare, though not often seen here. He mentioned a case of a patient in the hospital, who developed jaundice after a relapse of typhoid fever.

*A Method for the Quantitative Estimation of Acetone in Urine.*—DR. RUTTAN, in referring to the various methods of detecting acetone in urine, said he had no hesitation in recommending Leben's iodoform test as superior to all others both in the delicacy of the reaction and in the ease with which the test could be applied.

If much acetone be present it can, with little experience, be detected by applying the test directly to the filtered urine. This method is rendered more delicate by first precipitating the earthy phosphates by caustic soda or potash, and then applying the test. The test consists in adding to the urine a few drops of a strong solution of iodine in potassium iodide, and then adding an alkali (caustic soda, etc.) until the solution is just decolorized. A yellow opacity with precipitation of iodoform occurs if acetone be present. Nothing else that occurs in urine, except acetone, is able to give this precipitate of iodoform without warming.

When but minute traces (less than 0.05 per cent.) are present, the urine should first be made acid with sulphuric acid and distilled. When half the urine has been distilled, all the acetone has been found to be in the distillate.

He then demonstrated the application of a piece of apparatus he had constructed to use in connection with his method of determining the quantity of acetone in urine. This method depends on the fact that with the same quantity of iodine and alkali, variations in the quantity of iodoform produced in Leben's test are caused by a proportionate increase or diminution of the acetone. He used 5 c.c. of a standard strength of iodine, 10 c.c. of similar strength of caustic potash, and 1 c.c. of the distillate of the urine to be tested. The iodoform produced is dissolved up by shaking the mixture in a sort of separating

flask with pure ether, then the aquaous mixture below is run out, and the ethereal solution measured in the flask as it is graduated from the tap up. Half the etherised solution is run out on a weighed watch glass and allowed to evaporate at ordinary temperature. The iodoform left is weighed, and the quantity so obtained multiplied by 0.55 will equal the acetone in 1 c.c. of the urine.

In a chemical laboratory from forty to fifty estimations could be made in a day, and the percentage of acetone determined to the third place of decimals with perfect accuracy.

*Acetonuria.*—DR. RUTTAN and DR. WYATT JOHNSTON read a paper upon a fatal case of cerebral apoplexy, in which sugar and acetone had been detected in the urine.

The patient, a man aged sixty-seven, had been under the care of Dr. R. L. MacDonnell, who had been his medical attendant for the last seven years, and had repeatedly examined the urine during that time, always with negative results. The fatal illness had set in suddenly with an apoplectic seizure. Coma had set in immediately, and had lasted for twenty-four hours. The urine was found at the time of the seizure to contain 1.7 per cent. of sugar, which had increased next day to 2.4, and then had disappeared entirely. Acetone to the amount of 0.31 to 0.37 per cent. was found associated with the sugar, and the quantity had persisted for five days after the sugar had disappeared.

The patient had partially recovered consciousness, and had complained of severe occipital pain. Death had occurred suddenly and unexpectedly on the twelfth day of the illness. The condition had been regarded as one of diabetic coma, but at the autopsy an extensive cerebral hemorrhage was present, involving the whole of the base of the brain, but most extensive over the medulla. Dr. MacDonnell concluded from this instance that in every case where there is sugar in the urine it was not necessarily a case of diabetes.

DR. MILLS said that the present case appeared to him like one that was being gradually poisoned from some retained substance in the body, which was unknown to us, and deranged metabolism generally.



DR. JOHNSTON stated that in view of the post mortem, poisoning by acetonuria could not be regarded as being the cause of any of the symptoms. The hemorrhage had produced both the coma and the acetonuria. The blood obtained at the autopsy was free from acetone. The death was probably due to a recurrence of the hemorrhage.

DR. RUTTAN thought that the urine of patients suffering from coma should be examined for acetone, as well as for sugar and albumen.

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*Stated Meeting, January 23rd, 1891.*

F. J. SHEPHERD, M.D., PRESIDENT IN THE CHAIR.

*Epithelioma of the Mouth.*—DR. JOHNSTON exhibited this specimen for Dr. Bell. The tumor, the size of a walnut, was situated behind the symphysis of the lower jaw. The surface was ulcerating. The growth infiltrated the submucous and muscular tissue in its neighborhood, and had extended into the periosteum. Microscopic examination showed the growth to be an epithelioma. At the autopsy, performed four days after the operation, the wound was granulating. No thrombi were found in the vessels of the neck or the pulmonary arteries. The lungs showed a patch of acute pneumonia, as large as an orange, in the upper lobe of the left lung. At the right apex was an extensive fibroid area, evidently of tuberculous origin, in the centre of which was a small cavity the size of a cherry, with smooth walls, communicating directly with a bronchiole. There were no signs of food in the air passages.

DR. BELL briefly related the history of the case. The patient was 59 years of age, an old soldier, and a smoker. His trouble dated back to May last, but it was only in August that his mouth became sore. The patient's condition was rather poor. There were signs of old tubercular disease at the upper lobe of the left lung. The patient died on the morning of the third day after the operation, somewhat suddenly, from an apparent syn-copal attack.

DR. JOHNSTON believed the cause of death to have been septic pneumonia, without any mechanical cause.

*Hæmatocele of the Testis.*—DR. BELL, who showed this specimen, remarked that it had come on suddenly, in one night, whilst the patient was ill in bed. The tumor had been tapped at the hospital, and a cellulitis of the scrotum had followed. Dr. Bell made an incision into the scrotum and found the visceral layer of the tunic dilated with blood-clot. On section, the testicle was found considerably injured by pressure. Dr. B. remarked that it was unusual to find hæmatocele without any history of traumatism.

DR. RODDICK agreed with Dr. Bell as to the rarity of cases of hæmatocele without traumatism. When this case had been tapped, a grumous and bloody serum escaped which led Dr. R. to believe that a cyst had been punctured, particularly as the testicle could not be felt.

*Multilocular Cyst of the Ovary.*—DR. LAPHORN SMITH showed this specimen, which weighed 45 lbs., which he removed from a woman aged 31. There were a great many adhesions. Hemorrhage had been very profuse during the operation, and the abdomen had to be reopened the following day owing to a recurrence of the hemorrhage, due to a small fissure between two segments of the pedicle. The patient was very weak from the loss of blood, and died three and a half days after the operation.

*Dilated Tubes.*—DR. SMITH also exhibited this specimen, on which he would report at a later date.

*Bone-marrow and Liver; Pernicious Anæmia.*—DR. JOINSTON showed the femur of a man, aged 50, who had died in Dr. Molson's wards from pernicious anæmia. The medullary canal was filled with red lymphoid marrow, except in the lower third, where traces of the fatty marrow still existed. The liver, from the same case, showed a large amount of yellow-brown pigment in the peripheral zone of the lobules. This pigment gave a marked iron reaction on treating the sections with ferro-cyanide of potassium and hydrochloric acid. The skin and subcutaneous tissues were stained a lemon-yellow tint. Numerous nucleated red blood corpuscles were found in the blood.

*Plastic Operation for Extrophy of the Bladder.*—DR. SHERHERD exhibited a case of extrophy of the bladder in a boy aged

12, on whom he had operated, and restored the anterior wall by Maury's operation. A large oval flap was first taken from the perineum and fixed beneath a short flap dissected from above. After union had taken place, the sides of the flap, which were unattached, were further dissected down and fixed beneath short lateral flaps. In the first operation, a hole had been made in the centre of the perineal flap for the rudimentary penis. The parts all united well except at the upper part, where a small portion sloughed and allowed urine to exude, and so prevented skin-grafting being to any large extent successful. This fistulous opening had, however, been closed by a recent operation, and now the bladder was completely covered and the parts had all skinned over. The boy was able to retain a couple of ounces of urine, and the double hernia which had previously existed as the parts contracted was completely cured.

DR. RODDICK considered the operation admirable. He had operated on a young woman some years ago for extrophy of the bladder, and had selected Ayer's method. A large square flap had been dissected from the abdomen above the bladder and turned down with the cuticular surface innermost. The raw surface was subsequently covered over by lateral flaps. The operation thus far had proved very successful. The patient left the hospital with the intention of returning in a few weeks to have the operation completed. She failed to do so. It was learned that she had got married!

*Study of Koch's Treatment in Berlin.*—DR. G. T. ROSS read a paper on the above subject, which appears in the present issue of this JOURNAL.

Brief reports of cases submitted to Koch's treatment in the Montreal General Hospital, which are being published in this JOURNAL, were made by Drs. Roddick, MacDonnell, Jas. Bell and Johnston.

DR. RODDICK was not yet convinced that the results would be as good as predicted. He agreed with Dr. G. T. Ross that the remedy was a dangerous one, and that all experiments should be made in hospital.

DR. R. L. MACDONNELL stated that, recognizing the respon-

sibility resting upon those who, occupying positions in public institutions, were entrusted with the experiments with the Koch fluid, he had endeavored to fulfil his duty towards the profession and the public. The profession regard with eager interest the result of the work. It was therefore necessary that the members of it should be put into full possession of all the facts of the cases on trial and the records of the observations made. The profession could then judge fairly of the result. Towards the public, it was the duty of those using the fluid to use the utmost caution. To pronounce a decided judgment upon the merits of the treatment was not possible, and therefore the members of the profession should be slow in the expression of opinion on the matter. Unless care were taken, the Koch treatment would develop into a form of cruel quackery. He had endeavored to secure cases in which (1) the diagnosis was beyond a doubt; (2) cases which had been under observation previously, so that a just comparison of their condition before and after treatment could be made. Three cases were selected, and the treatment was commenced on the 12th January:—

*Case 1.*—A boy of 18, who had been six weeks in hospital in the early autumn. The temperature had always been normal, or nearly normal, never having reached 100°. The symptoms were debility, loss of weight, cough. The physical signs were indicative of consolidation at the right apex, involving the upper third of the lung, and commencing consolidation of the left. Tubercle bacilli and elastic tissue in the sputum. For a week before the injections were made the temperature was taken hourly. It never went as high as 100°. The result of the treatment has been little more than negative. A reaction has occurred, inasmuch as it is plain that the temperature rises to a point higher than was observed before, after each injection. Up to date, Jan. 23rd, the patient observes no change. The physical signs are unchanged. The sputum has been examined every day, but no change in the number of bacilli has been noticed. The patient has lost weight since he had been under treatment.

(To be continued.)

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MEDICAL EDUCATION IN THE UNITED STATES  
AND CANADA.

The Secretary of the Illinois State Board of Health's Report on Medical Education in the United States and Canada for the year 1891 has been issued. This always interesting volume has probably done more than all other measures combined to promote the cause of higher medical education in the United States. Previous to 1868, there was not a single medical institution in that country which required or had provision for more than two years medical study.

Out of the 111 medical schools now in existence in the United States, 90 require more than a two years' course of study. There are 34 medical schools that require, or will do so within a short period, four years study, and three courses of lectures. There are only 1 schools that require four courses of lectures.

The statistics quoted is evidence of the great advancement made by our neighbors in their medical education.

There are 13 medical colleges in Canada, the great majority requiring an attendance of four winter sessions. We hope soon to see four years collegiate attendance compulsory in all our medical schools in Canada. Only one college requires more than four winter sessions. Dr. Rauch, in directing attention to the defects in the American system of education, refers to the lack of a sound preliminary education; to the superabundance of didactic lectures, and paucity of clinical and laboratory work, and to too short courses. As far as Canada is con-

cerned, our great defect is too many didactic lectures and too little laboratory work. The preliminary training of those who enter is probably equal to that of the most progressive European countries. The clinical teaching and requirements compare also favorably. As to the shortness of the course, all who intend practising in any of the provinces are required to attend four full collegiate years, but some of the schools do not require four years attendance at college from those presenting themselves for their degree.

The Ontario Medical Council, it is reported, are about taking steps to lessen the number of didactic lectures and increasing the laboratory and clinical work. Should they succeed in effecting this it will probably stimulate the medical boards of the other provinces to do likewise, and the result will be a great boon to the over-lectured Canadian medical student.

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### KOCH'S TREATMENT OF TUBERCULOSIS.

As experience accumulates relative to the value of Kochine, it is becoming clear that it is far from being either an agent useful for diagnostic purposes or for the cure of either local or general tuberculosis.

It is not uncommon to meet with cases where neither a general or local reaction follows its employment, and already numerous cases have been recorded, where it has worked mischief.

Prof. Drasche, of Vienna, recently exhibited a patient with tuberculosis of the tongue, before the Society of Physicians of that city, after several weeks treatment, the only change noticeable was a marked extension of the infiltration. If any form of local tuberculous disease is amenable to this treatment, we should think such would be a case of tuberculosis of the tongue.

Prof. Drasche referred to the results in the treatment of twenty-two cases of pulmonary tuberculosis under his care. In a few cases in the early stages symptoms of improvement were noted. In some, on the other hand, there was a decided change for the worse, setting in so promptly after the injection

as to unfortunately leave but little room for doubt as to the cause. In the advanced cases, without exception, the symptoms, both general and local, became more marked. Dr. Drasche has good reasons, therefore, for concluding that Kochine is not a cure for phthisis in either its advanced or primary stages.

Bouret and Jeamel<sup>\*</sup> describe a case of quiescent tuberculosis of the right lung in a man, aged 22, which, after a single injection of 0.001 of the fluid, was followed by severe and repeated hæmoptysis. Death took place twelve days after the injection. At the post mortem several fresh pneumonic infiltrations were found in the right lung, the central portions of which were broken down (*broncho-pneumonia gangrenosa*). In one of these cavities a considerable quantity of fresh blood was found, and this was, according to the authors, the origin of the hæmoptysis. In the bases of both lungs, and throughout the entire extent of the left lung, there was found numerous submiliary tubercles. Besides the above reported cases, numerous others might be cited, showing the untoward effects of this powerful agent.

On the other side we have the evidence of very able and competent observers, pointing out the value of Koch's liquid. Neisser, Ziemssen, Esmarch, Sonnenburg, and many others have adduced evidence which at least goes to show that the remedy is not without a marked beneficial influence in some cases. It is questionable whether an actual cure has been proven, even in lupus cases. Both Hutchinson and Kaposi are doubtful on this point. We will, therefore, have to wait for some time before coming to any definite conclusions as to the value of this agent.

No one can, however, read an account of recent experiences without feeling the great responsibility assumed, when any patient, even a lupus case, is advised to submit to this treatment.

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\* La Semaine Medical, No. 4, 1891.

### Medical Items.

— The term "Tuberculin" is now applied to Koch's fluid.

— Prof. Sattler, of Prague, succeeds to the chair of Ophthalmology in the University of Leipzig.

— The authorities of the Warsaw hospital have forbidden the further use of Koch's liquid in that institution.

— Dr. Angerer has been appointed to the chair of surgery in the University of Munich, vacant by the death of Nussbaum.

— Prof. Jolly, of Berlin, has had under his care two cases of temporary delusional melancholia as the result of the Koch treatment.

— In Berlin and Dorpat experiments have been made to determine the diagnostic value of Koch's lymph in bovine tuberculosis, and it is said with success.

— No definite, favorable changes of a permanent character have been noted in any of the twelve cases of external and internal tuberculosis treated in the Montreal General Hospital by Koch's liquid.

— The number of students attending the different faculties of the University of Berlin amount to 5,527. Berlin heads the list of German universities, while Rostock is at the bottom, only 371 being in attendance. Nearly 30,000 students are in attendance at the twenty universities.

— Dr. Henoch, of Berlin, has little faith in the value of the Koch treatment in the tuberculosis of children. After having treated twenty cases in this way, he was uncertain whether it was wise to continue doing so any longer. Not one case reported cured, and not one improved, except one which subsequently relapsed into a worse state.

— It is with deep regret that we record the death of James McIntosh, M.D., of Vankleek Hill, Ontario. Dr. McIntosh graduated in McGill University in 1859, and has always practised in Vankleek Hill. He was a man that was universally respected. In addition to attending to the ever-pressing claims of a large and arduous country practice, he was always an active worker in general educational matters.



PRELIMINARY PROGRAMME of Sixth Annual Meeting of the Association of American Physicians, to be held in connection with The Second Congress of American Physicians and Surgeons, at Washington, D. C., September 22nd, 23rd, 24th and 25th. 1891 : —

1. The President's Address — Wm. Pepper, Philadelphia.
2. Discussion on the relations between Arterial Disease and Visceral Changes — *Referee*, Geo. L. Peabody, New York. *Co-Referees*. James K. Thatcher, New Haven, Wm. T. Councilman, Baltimore.
3. Discussion on the Remote Results of the Removal of the Ovaries and Tubes — *Referee*, Wm. T. Lusk, New York; *Co-Referee*, Wharton Sinkler, Philadelphia.
4. Discussion on the Treatment of Visceral Tuberculosis by Koch's Method. Reports by Francis P. Kinnicutt, New York; Harold Ernst, Boston; Wm. Osler, Baltimore, and Commission of University of Philadelphia, reported by Drs. Musser and Griffith, Philadelphia.
5. Experimental Studies on the Causes of the Localization of Pulmonary Phthisis, and Certain Other Infectious Diseases in the Lungs — J. West Roosevelt, New York.
6. The Relation of Drinking-waters to Disease — Henry P. Walcott, Cambridge.
7. Intestinal Perforation in Typhoid Fever — R. H. Fitz, Boston.
8. On Changes in the Red Blood Corpuscles in the Pernicious Anæmia of Texas Cattle Fever — (By invitation) — Theobald Smith, Washington.
9. On the Diseases of the Kidney, popularly called "Bright's Disease" — Francis Delafield, New York.
10. The Use of Albuminous Food in the Diseases of the Kidney — Wm. H. Draper, New York.
11. Bradycardia in Acute Articular Rheumatism — I. E. Atkinson, Baltimore.
12. The Treatment of Epileptiform Neuralgia — James Stewart, Montreal.
13. The Condition and Prospects of the Library of the Surgeon General's Office, and its Index Catalogue — John S. Billings, Washington.