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THE

MONTREAL MEDICAL JOURNAL.

VOL. XXXI. NOVEMBER, 1902. No. 11.

Original Communications.

CLINICAL NOTES ON BLOOD PRESSURE IN DISEASED CONDITIONS.*

BY

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This paper is not intended as an exhaustive treatise on blood pressure, but as a contribution to the study of the subject from a clinical standpoint. The arterial pressure has been measured with Gærtner's tonometer in 400 patients. This work has been done in the Royal Victoria Hospital, Montreal, chiefly for the purpose of submitting the instrument to a practical clinical test. I have pleasure in taking this opportunity to express my thanks and indebtedness to Dr. James Stewart for permission to make these observations, and to Drs. W. F. Hamilton and C. F. Martin for their kind co-operation, also to the resident staff for courteous assistance.

Typhoid Fever, 70 cases:—These were recorded in different stages, showing an average blood pressure of 104.5 mm. for the whole number (110 to 120 is taken as the average normal for this instrument). It was highest, but still subnormal, in the first week, being 107.4 for seven cases—only a small proportion reaching hospital in the first week. In second week, 103.6 for 23 cases. In third week, 104.7 for 13 observations; and after third week, including protracted cases and convalescents, 104.2 in 47 observations. As cases came in at different stages, somewhat changed values might be found in a selected series in which observations could be made in each week in each case.

There was only one death. This was a man of 35 years whose

* Read before the Canadian Medical Association at Montreal, Sept. 16, 1902.

pressure was 105 on the 10th day, 110 on the 21st day; then came three hæmorrhages and a fatal termination on the 24th day.

Of seven cases noted as severe, the lowest reading was 80 with prostration, delirium, cardiac enlargement and relative insufficiency; one case of 80 after three severe hæmorrhages; others of 98, 99, 95. One with old disease of the aortic and mitral valves showed 110 on the 43rd day during relapse, and 115 during convalescence. Readings of 90, 85, 96 were found in cases of mild or moderate course.

One case of acute parenchymatous nephritis and an average urea excretion of 240 grains per diem during seven days, was slightly subnormal (105) on the 12th day, and quite low (85) on the 29th day, when convalescent. The highest reading was 140 in the first week in a case with chronic interstitial nephritis and an average urea excretion of 73 grains per diem. during seven days.

A large proportion of these typhoids had cold baths or cold spongings. In only one or two instances were observations made within two hours after application of cold. In one case, 20 minutes after general cold sponging, pressure was 85. The fingers were slightly bluish and possibly there was a certain degree of local asphyxia. Gærtner states that observations under such conditions are not reliable.

Chronic Nephritis, 19 cases:—In this group the highest readings were found, *viz.*, one of 260, two of 255, one of 240, one of 225 and so on, or an average of 208.5 for the thirteen high pressures. Six were at or below normal, giving an average of 178.9 for the 19 patients. One case of chronic parenchymatous nephritis with persistent and uncontrollable vomiting and normal tension proved fatal; one slightly subnormal (106) with œdema and ascites died; and one of 100 with extreme general œdema, ascites and hydrothorax, was of course a bad prognosis. Two cases of normal tension showed no bad symptoms, and in these no doubt the prognosis is very good, much better than in those with no bad symptoms apart from high pressure.

Probably in chronic nephritis a considerable fall in blood pressure, which has long been high, with increase or appearance of œdema and increase of other symptoms, indicates a very serious condition.

One case was brought in almost in a state of collapse, but improved rapidly with hypodermics of strychnine, and with the improvement the blood pressure rose and remained very high (190 to 200). Another case presenting the picture of failing heart power with enormous œdema of lower extremities, hydroperitoneum and hydrothorax, had a pressure of 162 when I first saw her, the day after large doses of digitalis had

been commenced; and on the third day of digitalis reached 205—an increase of 43 mm.—and a considerable degree of improvement took place. In one of the subnormal cases there was no rise after digitalis and no improvement.

In cases of what might be termed chronic high pressure there have been several instances where a lowering of blood pressure has been coincident with an increase of severity of symptoms, and complaints of headache, malaise, etc. There has been no such case benefitted by lowering of blood pressure, but several have improved during an increase. Probably in such chronic high tensions the various functions cannot be carried on at a level, normal for healthy individuals; and when we give vasomotor depressants we do harm in proportion to the lowering achieved. The symptoms are not due to the high tension, but to the cause of the high tension. Several cases clinically diagnosed as chronic parenchymatous nephritis gave high readings; one of 197 was verified at post mortem.

Acute Nephritis, 7 cases:—Only three of these showed high pressure. One with considerable œdema and pallor, which was still at the normal pressure after six months duration, rose to 180 in the eighth month, possibly showing a change in type of the disease and advancing lesions in kidneys and general capillary walls.

One interesting case came in with œdema and convulsions complicated with middle ear disease. The high pressure found (195) was to me a strong factor in the diagnosis of uræmia, as against meningitis or cerebral abscess. The œdema and albumin disappeared, and the patient was discharged after six weeks with normal blood pressure.

There were no serious symptoms at the time of measurement in any of those with normal pressure, although in one of them there had been apparently a uræmic condition and a tension digitally estimated to be very high, two weeks before I saw her.

Arterio-Sclerosis, 27 cases:—Highest, 210; 16 being 150 and over; 4 from 130 to 145; 3 from 110 to 125; and 4 subnormal. The highest was in a man of 72, with glaucoma, no albumin. Three other cases of glaucoma in elderly females without albuminuria gave high readings, 200, 200, 170. I am indebted to Dr. Buller for permission to observe these glaucoma cases.

Only one of the arterio-sclerotics is noted as having albuminuria, but at post mortem only slight changes were found in the kidneys, which were attributed to stasis from cardiac insufficiency. This patient, a negro aged 45, was in the wards several months with increasing œdema,

orthopnœa and cyanosis, presenting the whole picture of failing heart power, whilst his blood pressure increased from 160 in May to 200 in June, and was 200 a few days before death. The radial was but slightly thickened; systolic murmur at apex; second aortic sound very loud, prolonged, and low pitched. Nitroglycerine, 1/100 grain three times daily, did not lower his blood pressure. Post mortem: heart enormous, 800 grammes; ventricles hypertrophied and dilated; no valvular disease; advanced atheroma, chiefly of aorta with constriction of aorta to 5 cc. at beginning of descending portion, right coronary artery obliterated at its origin; heart muscle showed no macroscopic evidence of degeneration.

Of the subnormal arterio-scleroties, one, J. E., male, had radials thickened and tortuous; left ventricle slightly enlarged; blood pressure 90, distinctly subnormal; no œdema. One with radials extremely hard, thickened and tortuous, showed 90 mm., but was almost *in extremis* from cancer of bowel at time of observation. One male, aged 81, gave reading of 85 with extreme degree of arterio-sclerosis; pulse irregular, failing heart. One man of 65, with radials of extreme hardness like rigid tubes and practically normal pressure (130), had been at work as a gardener up to a day or two before admission.

In one of these non-albuminuric cases whom I saw in private practice, I noted the presence of high arterial tension in 1893. This summer, in her 73rd year, I found the pressure by the tonometer 180. It appears, then, supposing my digital estimate to have been correct, that moderately high tension in an elderly person without albuminuria is not necessarily of very bad prognosis. Cheyne-Stokes breathing was also noted in this patient nine years ago during an attack of epidemic influenza, and at intervals since then it has recurred whenever she has been ill.

Valvular Disease of the Heart, 48 cases:—Including mitral regurgitation, 11 cases, of which all had normal pressure but three, and only one was below 100 (90). In many of them compensation was most seriously impaired.

Mitral stenosis, 8 cases:—6 normal, some of them with compensation bad. One of 100 mm. able to walk about the ward, but with heart greatly enlarged, œdema, dyspnœa, cyanosis, and a history of two attacks of hemiplegia. One, a male aged 32, convalescent from acute articular rheumatism, had been able to work up to present attack. One with normal pressure had been unable for any considerable degree of exertion during preceding six months.

Mitral stenosis with mitral regurgitation, 14 cases:—Eleven had

practically normal tension, some of them with most serious symptoms of failing compensation. One, a female aged 45, had pressure of 190 and chronic nephritis. Although diagnosed and classed as valvular disease, it is quite possible that she has only relative insufficiency. It is exactly in patients such as this that I think that the tonometer is of assistance in arriving at a diagnosis. Where we find a blood pressure decidedly high, an enlarged heart and a systolic murmur, with chronic nephritis, there is, in the great majority of cases, no valvular disease, the nephritis being primary and the murmur a danger signal of dilatation and failing cardiac power. This patient showed disappearance of headache and malaise whilst her arterial pressure rose 15 mm. under digitalis. Nitroglycerine, 1/100 grain three times daily, did not lower her blood pressure. In this group were also two readings of 100, one with good and the other with bad compensation.

Aortic insufficiency, 3 cases:—One well marked case, compensation good, pressure normal. One male, aged 39, pressure three days before death 135, five hours before death 120. Post mortem—heart very large, 500 grammes, vegetative endocarditis chiefly about aortic orifice, perforation of one aortic cusp, many infarcts in viscera, superior mesenteric artery occluded by embolus two inches from its origin, thrombosis of portal vein, peritonitis. One of 100, exquisite *pulsus celer*, orthopnœa, œdema, heart muscle enlarged, died two days after observation suddenly. Post mortem showed aortic obstruction as well as insufficiency, relative insufficiency of mitral, lumen of one coronary artery much diminished.

Two of these cases, then, were normal, and one subnormal. If this tonometer merely shows maximum pressure, as many contend, it appears that in these three cases the large pulse wave (arterial excursion), did not give a high reading. In many other patients with pulse beat small, feeble, intermittent and irregular, the reading has been normal or even over the normal. Possibly in pulses of large volume the maximum pressure is not really high, even in the water-hammer pulse. If the highest point of pressure coincides with the passage of a reflected wave centripetally (as contended by Ewart*) and is due to the interference of the primary and first secondary wave, then possibly the duration of the true maximum is too brief to be recorded by the instrument, and the reading obtained is approximately that of the mean pressure.

Disease of Aortic Valves and of Mitral Valves, 13 cases:—Six were normal, some with bad compensation. Four moderately high, 150,

*Ewart, Pulse Sensations. Baillière, Tindall & Cox.

165, 150, 150; all of the latter with albuminuria, and three of them showing serious symptoms of failing compensation. Of the subnormals one was 85, recovering from acute endocarditis and pericarditis; one 95, compensation fair; one 100, active endocarditis.

Myocarditis, 4 cases:—One male, aged 60, pressure 80, heart sounds weak and irregular, moderate degree of arterio-sclerosis. One male, aged 57, pressure 115 the day before death. Post mortem, myocardial degeneration, no valvular disease, slight degree of mixed nephritis. One female, aged 48, pressure 125 two weeks before death. Post mortem, infarct in cardiac wall at apex of left ventricle, old thrombosis left ovarian vein, no valvular disease.

The presence of normal cardiac tension is therefore no criterion of cardiac adequacy. There can be normal tension with little or no reserve power.

Hypertrophy and Dilatation of Heart of Unknown Causation, 2 cases:—One male, aged 49, pressure 120 two weeks before death. Post mortem, heart greatly enlarged hypertrophied and dilated, no valvular disease, no macroscopic evidence of degeneration, no arterio-sclerosis, no nephritis. The other was a male, aged 43; pressure 110 a few days before death. Post mortem, heart 600 grammes, much hypertrophy and dilatation, no valvular disease, no macroscopic evidence of degeneration, no arterio-sclerosis, no nephritis. No toxic history in either of these cases.

Aneurism, 3 cases:—One of ascending aorta, 160 mm. in June, 1901; 125 in September, 1902; both hands equal. One involving arch and innominate (?) 120 in January, 1902; 105 in June same year. One of ascending aorta, 75 in right hand, 55 in left. Unfortunately this patient was seen only once and opportunity to verify this extraordinary reading did not occur.

Acute Lobar Pneumonia, 18 cases:—Here there was an average for the series of 92.7, being the lowest average for any group. Only one died, and this was a case of pneumonia in puerperal septicæmia, in whom a pressure of only 55 mm. was recorded 5 days before death. One case showed 122 on the fourth day, but went down to 75 on the eighth day; severe attack, recovery. P. A., middle aged man, gave 60 on the third day after the crisis and was still only 80 on the day of discharge, two weeks later. J. D., a tall muscular laborer, severe case, 110 on the eighth day, crisis on the ninth day, 120 on the twelfth day.

In view of the low pressure almost invariably found in this disease and the fact that in none of them was the blood pressure at any time high, it does not seem that pneumonia offers a field for vasomotor depressants.

Pleurisy, 16 cases, 14 of them with more or less effusion:—Seven slightly subnormal, the others normal. Possibly absorption would be hastened if pressure could be raised when subnormal readings are found. One case of empyema with pneumothorax had pressure of only 75, which rose to 110 after aspiration of 42 ounces of greenish, purulent fluid. Other observers have found pressure higher before than after aspiration in pleurisy and ascites.

Tuberculosis of Lungs, 14 cases:—No high readings; in advanced cases moderately subnormal pressures almost invariably found.

Neurasthenia, 18 cases:—Thirteen normal; from 135 to 140; one of 160. In one case, a female, aged 40, the first reading was 180, but on subsequent observations fell to 135. A majority of these neurasthenics, and indeed a large proportion of women and a considerable proportion of men, give too high a reading at first measurement, probably from emotional influence (cortical stimulation). One a male, aged 28, had persistently the low reading of 80. He had indications of developing melancholia.

Malignant Disease of Viscera:—No high readings; all definitely low but two. One of these latter was in quite early stage, and the other had hæmorrhagic pleurisy. Low blood pressure is in favour of diagnosis of malignant disease, but is late in appearing.

Anæmia, 6 cases:—All normal. One chlorosis normal.

Pernicious Anæmia, 2 cases:—One very low (60); one well marked, 90.

Addison's Disease, 2 cases:—Both in early stage; both normal.

Purpura Hæmorrhagica, 1 case:—Normal.

Puerperal Septicæmia, 2 cases:—One prolonged case ending in recovery had an extremely low blood count (red cells 930,000, white 6,000), and hæmoglobin percentage 10 to 20, with mitral presystolic murmur, yet a blood pressure persistently slightly above normal (140);

urine 1015, half gramme of albumin to the litre. Another serious case has thus far a pressure of 100.

Gall-Bladder, 1 case:—With suppuration of intrahepatic branches of portal vein, septic pneumonia and metastatic abscesses, gave a blood pressure of only 50 mm. ten days before death, when her general condition was comparatively good. This is the lowest reading found in the whole 400 cases. The other very low one (55) was also in a septic condition (puerperal), with septic pneumonia, and also proved fatal.

Lead Poisoning, 1 case:—Male, aged 30, pallor, colic, tremor, convulsions, trace of albumin, pressure normal (110).

Jaundice, 3 cases:—One 80 mm. in a middle aged man proved fatal few weeks subsequent to observation. No post mortem; liver much enlarged. One case, normal; one 160, with trace of albumin. In all of these jaundice had persisted ten weeks or more at time of measurement.

Abdominal Tuberculosis, 4 cases:—Two slightly subnormal and two normal.

Tuberculous Meningitis, 1 case:—In a male aged 30, pressure of 115 two weeks before death.

Diabetes Mellitus, 2 cases:—One of five weeks duration in an elderly man with albuminuria gave a reading of 225 at one observation. Pressure afterwards fell during administration of nitroglycerine to 140. With the fall in blood pressure œdema increased, and his general condition became much worse; afterwards with rising blood pressure he improved. The other case, a male, aged 40, with 6 per cent. of sugar, moderate arterio-sclerosis, no albumin, pressure 105.

Exophthalmic Goitre, 2 cases:—In one of them, a middle aged woman in whom symptoms were well marked, pressure in October, 1901, was 130 mm.; December, 1901, 135. In January 1902, she began to take suprarenal powder, 2 grains three times daily. This was continued without intermission and in July increased to 3 grains three times daily. No rise of pressure was noted with the suprarenal, but systematic observations were not made. In February the reading on one occasion was 120; in May 135; in July 110. General improvement took place with increase in weight. The other case, which was not at all severe,

had quite normal pressure (110) which was not definitely influenced by suprarenal powder.

Acute Articular Rheumatism involving the heart, 8 cases:—Six normal, 2 slightly subnormal.

Acute Articular Rheumatism, heart not affected, 5 cases:—One normal, 4 slightly subnormal.

Chronic Articular Rheumatism, 4 cases:—All normal.

Gonorrhœal Rheumatism, 8 cases:—Six normal, two moderately subnormal.

Rheumatoid Arthritis, 10 cases:—Six normal, and one of 85, one 95, one 100, one 105.

Gout, 4 cases:—Only one of them well marked. This one had albuminuria and moderate arterio-sclerosis, yet a reading scarcely over the normal (130). The others had normal pressure.

Hemiplegia, 1 case:—In the course of chronic nephritis, with heart negative and a moderate degree of arterio-sclerosis, showed high pressure in both hands, but 10 mm. lower in the paralyzed than in the sound hand. Another similar case with higher pressure gave equal readings in both hands. Two other hemiplegias with slightly low pressure had practically equal readings in both hands.

Tabes Dorsalis, 14 cases:—Eleven normal, 3 slightly raised, one of the latter having albuminuria, and two arterio-sclerosis.

Cerebral Tumour, 8 cases:—All normal pressure; one who gave a slightly high reading, but was suffering intense pain at the time of observation.

General Paralysis of the Insane, 1 case:—With moderately high tension, slight arterio-sclerosis, urine 1012, trace of albumin, normal.

Friedreich's Ataxia, 2 cases:—One with albuminuria and small amount of sugar in urine, slightly raised (140); one combined with cerebellar ataxia, normal.

Acute Ascending Paralysis, 1 case:—Involving phrenics, in a male, aged 27. Pressure was slightly raised (140) during worst phases of attack, and remained so during several weeks, but gradually came down and was nearly normal at time of discharge; no albuminuria.

Tic Douloureux, 2 cases:—One, 130 during attack; the other with slight arterio-sclerosis, 160 in the intervals.

Epidemic Influenza:—One case slightly subnormal (95).

Miscellaneous Cases 36; distributed over twenty-five different diseases, all showed normal pressure. They include:—Erythema nodosum, chorea, lumbago, pericarditis, erysipelas (in convalescence), tonsillitis, abscess of lung, hysteria, epilepsy, neuralgia, lateral sclerosis (3), disseminated sclerosis (2), muscular atrophy of spinal type, anterior poliomyelitis, sciatica, infective meningitis (middle ear disease), adenitis, appendicitis, lymphangitis, and gastric ulcer.

Most of these observations were made between 9.30 a.m. and 12 noon, some between 3 and 5 p.m., and a few between 1 and 2 p.m. Nearly all the patients were recumbent, only a small number were seated. Whenever the reading was other than normal it was repeated several times and on different days and the most constant result noted.

Many objections have been urged against the instrument as to its reliability. The uniformity of the results obtained in these 400 cases is a considerable testimony in its favour. It is useful in diagnosis, in prognosis, and in measuring the effects of treatment directed to the increase or decrease of arterial pressure. Probably in life assurance work this tonometer will find a field of usefulness.

Notes have been made in a few cases after administration of suprarenal powder, digitalis, nitroglycerine and erythrol tetranitrate. They are not sufficiently numerous to be particularly valuable. A rise of 43 mm. took place in three days in a cardio-renal case under digitalis in large doses. No considerable rise followed exhibition of suprarenal powder in four cases. Several high pressure cases taking nitroglycerine showed no fall. In one patient a fall of 80 mm. occurred under nitroglycerine in three weeks; but another high pressure, not getting nitro-glycerine nor any other vasomotor depressant, showed a variation of 60 mm. when followed throughout several months. In five trials of erythrol tetranitrate there was a fall of 10 mm. on one occasion and 18 on another in a high tension patient, also a fall of 10 mm. in each of two normal pressures, one of the latter remaining quite unaffected by a larger dose on a subsequent occasion. If, as stated by Oliver, the periodical, more or less rhythmical, variations in pressure in the normal individual may amount to 10 or 20 mm., then too much stress should not be laid upon variations within these limits following exhibitions of various drugs.

THE SUBCUTANEOUS INJECTION OF PARAFFIN WAX IN CORRECTING DEFORMITIES OF THE NOSE.*

BY

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To Gersuny[1] of Vienna is due the credit of introducing this method of treatment. He has used it with success not only in cases of nasal deformity, but for other defects in various parts of the body, *e.g.*, after removal of the maxillæ, to obliterate a hernial orifice, and after castration. His first cases of paraffin prosthesis of the nose were reported in 1900, in one of them two years had elapsed since treatment without impairment of the improved shape of the nose or softening of the paraffin, another had gone through typhoid fever without any ill result. Frey of Vienna has used this method to correct congenital defects of the pinna, Haskins[2] to fill in the cavity left after mastoid operations, Rhomer[3] and Dianoux[4] after enucleation, to improve the shape of the socket for an artificial eye, Pfannenstiel[5], Gersuny[1], Klapsamer[6] and others for incontinence of urine, and Halban[7] for prolapse of the uterus.

It is however within the past year that attention has been drawn especially to the suitability of this treatment for correcting deformities of the nose, particularly for filling up depressions of the dorsum following syphilitic, lupoid and tuberculous destruction of the septum, and for flattening of the nose the result of traumatism. On the 21st of October last, Hamilton[8] of Australia, reported five cases of saddle-back nose treated by paraffin prosthesis, he being, I believe, the first writer in English to record cases treated by this method. Heath[9] of Chicago soon after reported a similar case in which he had obtained a very satisfactory result. Since then Scanes Spicer[10], Walker-Downie[11], Parker[12], Harmond Smith[2], Baratoux[13], and Delie[14] have reported cases of this type, and previous to Hamilton and, since Gersuny, Stein[15], Moszkowicz[16], and other surgeons in Europe have obtained good results.

Lake[17] of London has used the injection of paraffin wax to form artificial inferior turbinals in a case of long standing atrophic rhinitis, and claims that the result was most satisfactory after various other methods of treatment had failed.

What happens to the injected mass in the tissues? It is probable that the paraffin becomes encapsuled and Gersuny claims it remains so

* Read before the Canadian Medical Association, Sept. 16, 1902.

indefinitely. Meyer[18], however, thinks it is slowly absorbed, and Stein[15] that it is replaced by connective tissue.

Paraffin of what *melting point* is most suitable? The consensus of opinion of those who have recorded their results is in favour of paraffin melting at 104° F. In my two cases paraffin of that degree of hardness was used. In several experiments (carried out in the Pathological Laboratory of McGill University) on rabbits, with paraffin melting at 102°, 107° and 112° I got equally good results with each, but there seems some ground for believing that in the case of the human subject, paraffin with melting points of under 100° may be absorbed, while those of 112° and upwards may cause necrosis of the overlying skin. In my first case, a slight superficial necrosis of skin the size of a pea occurred, but this I believe was due to the increased tension and not to the density of the paraffin.

Preparation of the Patient.—Careful cleansing of the part to be operated upon, strict aseptic precautions generally, and perhaps the injection of a few minims of a one per cent. solution of cocaine is all that is required.

Method of Performing the Operation.—Various more or less elaborate methods have been suggested, but the following simple one meets the requirements. Sterilize the paraffin by heating to 212° F. in a covered beaker; allow it to cool to 120° F. as tested with a sterile thermometer; then place the beaker in a basin of water at 120°. Fill a warmed, sterile, 5 cc. solid metal, serum syringe, to which the needle is yet unattached, with the warm paraffin. Express any air bubbles, quickly screw on a warmed sterile large calibered needle, and place the syringe thus charged until required in a basin of a saturated solution of boric acid at 120° F.

The operation.—The needle of the charged syringe may be inserted from near the tip or root of the nose as is most convenient, but it should be entered at a point at least half an inch distant from the depression and be carried subcutaneously a little beyond the point of greatest deficiency, making sure that the sides of the nose towards the inner canthi and the tissues over the nasal eminence are firmly compressed by the fingers of an assistant or by some mechanical appliance to prevent the escape of the paraffin in these directions. The piston of the syringe may then be slowly compressed, the point of the needle moved about as required, and when the desired amount has been injected, withdrawn. The assistant still retains his finger at the sites indicated, while the operator moulds the paraffin as it hardens, which in my experience takes two or three minutes or even longer. It is advisable to continue to keep the paraffin in good position for ten or

fifteen minutes, as until quite firm the elasticity of the nasal tissues tends to flatten it out. If the nasal orifices or cavities have been narrowed by the previous disease, it is advisable to introduce Asches nasal tubes of a suitable size during the operation and retain them until the paraffin hardens. Other points of importance are not to allow paraffin into the needle until the injection is commenced, and once started, not to stop compressing the piston until the operation is completed. Otherwise the needle will clog and cause much trouble and delay.

After treatment.—Apply flexile collodion to the needle punctures and place some absorbent wool over the part. If swelling of the nose and œdema of the eyelids commence, iced compresses and cold astringent lotions should be applied. Immediately after the injection the skin over the paraffin is very white; this is soon followed by hyperæmia. In several of the reported cases and in my own two cases there followed some swelling of the nose and œdema of the eyelids, which disappeared in a few days under cold compresses. In one of my cases (the first) the superficial congestion of the nose has been marked, but is gradually subsiding, now four weeks after operation. In this case numerous dilated vessels were visible through the skin of the nose previous to operation. In Heath's[9] case, redness persisted for about a month, then gradually disappeared. I have found that the application of an ointment composed of equal parts of suprarenal extract and vaseline to the hyperæmic area hastens recovery. My first patient suffered some pain in the nose on the first and second days after the operation, and the temperature rose to 99.8° F. and pulse to 120 on the second day. These were the highest points reached and the following day the temperature and pulse were normal and have remained so. In my second case no rise in temperature or pulse occurred, and no pain was felt during or after the operation.

The amount of paraffin required varies with the extent of the deformity to be corrected, but from 2 to 8 cc. is the amount that has been used in most of the recorded cases. When the larger amount mentioned is required, I believe it will be found best to inject it in two portions at short intervals, rather than the full amount at once, since if so done less reaction will follow.

The following are the chief points that have been urged against paraffin injections:—In one of Pfannensteil's[5] cases treated for incontinence of urine, pulmonary embolism followed, in this case 30 cc. of paraffin melting at 113° F. had been injected accidentally directly into a vein. Embolism of the ophthalmic vein has followed injection of

paraffin into a vein in another case (Leser[19]). Meyer[18] claims that paraffin is more or less toxic, but no case so far has been reported in which undoubted toxic symptoms have occurred. Necrosis of the overlying skin has occurred, but serious destruction of tissue has not been recorded excepting after the use of paraffin of a high melting point, 112° F. or upwards. Paraffin embolism, I believe, is a real danger, but can only follow injection of this fluid into a vessel, hence is avoidable.

The points in favour of this method are:—(1) It proves successful in cases where the nasal deformity has been caused by destruction of bone and cartilage, and for which surgery has been able to do but little in the way of removing the defect.

(2) The ease with which the treatment is carried out and its comparative painlessness.

(3) Its freedom from risk of injurious after-effects, if care is taken to avoid injecting into a vessel and paraffin of a proper melting point is used.

In both my cases a marked improvement on the condition previous to treatment has been obtained, and although the results are not perfect, the gain justifies the procedure and a further trial in suitable cases.

Case I. J.F., 47, sailor, 25 years ago received a blow on the nose which resulted in permanent flattening. Twenty years ago had syphilis. Seven years ago had bad necrosis of a portion of the septum which resulted in increased flattening of the nose.

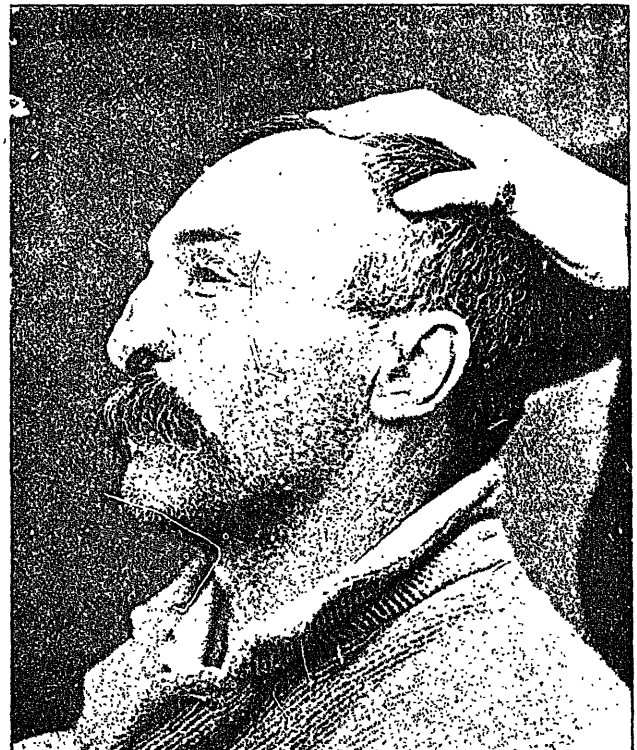
Present condition.—Aug. 14th:—Marked flattening below the nasal bones, dilated vessels over surface. Almost complete obstruction of the left nostril with cicatricial tissue; right nostril also narrowed from same cause. No perforation in septum.

Aug. 16th:—Six cc. of paraffin melting at 104° F. was injected under the skin of the dorsum of the nose, 4 cc. from above the depression and 2 cc. from below it. The increase in elevation of the nose is about one-third of an inch.

The day after the injection the nose and eyelids were swollen considerably and there was slight elevation of temperature and pulse on the second day (99.8° F., 100).

On the 18th, a small slough was noticed forming on the dorsum of the nose the size of a pea. All swelling had disappeared within a week; slough separated on the 2nd September. Hyperæmia of the skin still marked. On the 23rd September the cavity caused by the slough had completely filled up and the resulting scar was very slight. The left nostril was enlarged and a full sized Asches tube put in.

CASE I. BEFORE TREATMENT.



CASE I. AFTER TREATMENT (four weeks).

CASE II. BEFORE TREATMENT.

CASE II. AFTER TREATMENT (one week).

Sept. 30th:—Shape of the nose is very good, colour is nearly normal, breathing through both nostrils free.

Case II. Mrs. R., age 42, married fifteen years, four children living, youngest seven. Five years ago said she had a severe blow on the nose from a clothes line which she blames for her nose trouble; but the cause is clearly luetic.

Sept. 4th:—There is complete destruction of both the cartilaginous and bony septum and of the lower portion of the nasal bones, resulting in considerable falling in of the nose. The apex of the nose is deviated slightly to the left. There is a large perforation in the hard plate.

Sept. 6th:—Three cc. of paraffin were injected below the depression, the needle being entered ½ inch from the apex of the nose. Ten minims of a one per cent. solution of cocaine was previously injected. No pain was felt during the injection of the paraffin or since. The day following, some swelling was present in the nose and eyelids. This subsided in 48 hours under cold compresses. During the injection a small amount of paraffin escaped towards the forehead and lodged over the nasal eminence. Precautions had been taken against this accident, but sufficient pressure had not been maintained. The photographs illustrate the condition in each case before and after treatment.

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CONGENITAL DISLOCATION OF THE HIP—WITH NOTES OF THREE CASES.*

BY

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While congenital dislocation of the hip is neither a very common, nor yet a very rare deformity, I would say, at least judging from my own experience, that the number of cases which seek surgical relief is comparatively small.

Whether this is owing to the fact that the general profession have so far not been impressed with the results of surgical interference, or that these patients are so little inconvenienced by the awkward gait, deformed spine, the more or less suffering after unusual exertion, that they prefer—or rather their parents do for them—to remain deformed than to undergo the risks of surgical procedure; I really do not know.

My reasons for bringing this subject before the Society, are to elicit discussion on the treatment of a condition, which must interest every general practitioner as well as surgeon; and at the same time to present the report of 3 cases which applied for treatment at the Royal Victoria Hospital during the present year.

So far as I know, no satisfactory etiological reason for the deformity has been given, nor any to explain its more marked frequency in the female sex. Heredity is undoubtedly a factor.

The pathological changes are not such as follow unreduced traumatic dislocations, particularly is this true of the capsule, which in congenital dislocations, is not ruptured but is elongated, greatly thickened, and adherent to the surrounding structures, while it assumes not frequently an hour-glass shape, with more or less narrowed ring— the upper half containing the head of the femur, the lower half tightly stretched across the misshapen and almost obliterated acetabulum, to which it may or may not be adherent. This narrow ring and adherent lower sac constitute the chief obstacles in the bloodless operation devised by Post, in 1884, practised by Paci, in 1888, and perfected by Lorenz and Hoffa during the last decade of the 19th century.

The elongation of the pelvi-trocanteric muscles in this deformity, was pointed out by Dr. Shepherd, of Montreal, in his "Notes on the

* Read before the Canadian Medical Association at Montreal, Sept. 18, 1902.

Dissection of a Case of Congenital Dislocation of the Head of the Femur," as long ago as 1879; and Hoffa modified his original views concerning the part played by these muscles in preventing reduction of the dislocation, inasmuch as mechanical means are now adopted in his present technique to keep the head of the femur in the acetabulum after reduction, until these muscles have *shortened* and regained sufficient tone. The pelvi-femoral and pelvi-crural muscles are shortened, and constitute important obstacles to reduction.

The bending forward of the neck of the femur and the altered shape of the head of the bone may necessitate so much inversion of the leg after reposition that only an osteotomy can make the limb useful for locomotion.

The acetabulum, like the head, is misshapen. It is usually filled up with fibro-cartilaginous tissue, but as a rule it can be easily located by following the attachments of the capsule, at its lower end.

The pathological findings, however, vary widely according to the age of the patient. Mikulicz states that at birth the head and neck of the femur are nearly normal—the acetabulum is large enough to retain the head of the femur—the capsule is large and roomy—the ligamentum teres is either absent, or is thickened and elongated.

The changes in the joint just described do not occur until the patient has walked, and vary according to the age.

The symptoms and signs of the deformity differ according as the dislocation is single or double, and to the position of the head about the acetabulum; but as a rule, the condition is not recognized until the child commences walking—usually in the second year.

While a diagnosis is usually readily made, the following conditions have been mistaken for this deformity, viz., coxa vara, distortion following infantile paralysis, separation of the epiphysis, deformity following early arthritis of children, traumatic dislocations, deformity following hip disease.

In all of these, with the exception of coxa vara, there is a history of trauma or disease. In coxa vara, congenital dislocations, and in infantile paralysis we get free movement of the joint. Coxa vara is rarely seen before 5, the trochanter moves about the head of the femur, and does not alter its position on traction; besides, we get other evidence of rickets.

The disability of this deformity varies according to the position of the head, being most marked when it lies above and behind the acetabulum, the lameness and secondary spinal curvatures usually increase as age advances. There seems to be much divergence of

opinion among observers as to whether actual pain is a prominent symptom.

Bradford, of Boston, in a recent communication, says: "The collected experience of the operative treatment of congenital dislocation of the hip joint has demonstrated the following facts: 1st. In many cases successful reduction of the dislocation has been performed. 2nd. Frequently, however, relapse has occurred after apparently successful reduction. 3rd. Relapse is more frequent after the operation without incision than after operation with incision."

Time will not permit even of a short summary of the various methods of treatment and their modifications, which have been employed in dealing with this deformity. At the present time reduction is effected chiefly by two methods. The so-called bloodless method, as perfected and practised by Lorenz and Hoffa; and, 2nd, reduction through an open incision.

During the last year or two many cases of successful permanent reduction by the bloodless method have been reported; and Ochsner, of Chicago, recently described the condition of a joint three years following treatment, as follows:—The head of the femur was covered by cartilage, and lay in an acetabulum which was almost as deep as the opposite and normal one, the capsule contracted and shortened, hugging the neck as in a normal joint.

Success by this method depends upon the age; in children over 2 and under 5, and in some instances between 5 and 7, forcible reduction under an anesthetic can be successfully used. Where relapse occurs after this method, it is believed to be due to a fold of the capsule lying between the head and the acetabulum, which, in successful cases, becomes absorbed by pressure atrophy. The operation is carried out under a general anesthetic, the pelvi-femoral and pelvi-crural muscles are forcibly stretched by manual traction, or by multiplying pulleys, or other device, assisted if necessary by tenotomy of unyielding muscles. Extension is continued until the trocanter lies at the level of Nelaton's line; counter-extension is secured by placing a well padded strap over the perineum. At this stage the thigh is steadily abducted, rotated inwards and flexed. The operator steadying the pelvis attempts to gradually lift the head over the posterior border of the acetabulum, when, if successful, the head enters into the cavity with a distinct shock. Evidences of successful reduction are seen in lengthening of the limb—fullness in the groin, the absence of the head from the ilium—an increased tenseness of the hamstring muscles. Reposition is maintained by applying a snugly fitting plaster of paris bandage to the pelvis and thigh in the abducted and slightly over-extended position. The child

is allowed to walk at the end of 10 or 14 days, is in fact encouraged to do so. The first bandage is allowed to remain on for 4 or 5 months, and is replaced by another in diminished abduction, and if necessary, a third bandage for another month or two, until the operator is satisfied that the structures are sufficiently strong to maintain the correction. Ochsner reports Lorenz with 212 cases, giving 108 anatomically and functionally perfect results; 102 anatomically imperfect, but functionally good results. Now, with this compare Bradford's statistics from 1899 to 1900. Seven cases, 10 hips; all reduced by bloodless operation, and all relapsed.

The bloodless method, even in the hands of skillful operators, gives but 50 per cent. of perfect anatomical repositions. The operation is by no means devoid of danger, death having occurred from gangrene of the limb, shock, besides minor accidents, as fracture of the neck of the femur, paralysis and hæmatomata.

My own experience has been chiefly by operative procedure, employing an anterior oblique incision, running from the anterior superior spine downwards and outwards, just below the head of the trochanter, exposing the capsule by separating the tensor vaginæ femoris from the gluteus medius, opening it by an incision running parallel to its axis, and separating the outer extremity of the capsule from the neck, both on its anterior and posterior aspects; thoroughly separating the structures inserted into the trochanter minor. (This is of prime importance). If traction with abduction now fails to place the head of the bone in the acetabulum, tenotomy of unyielding structures ought to be performed. In future, in children over 7 with much shortening, and especially where the muscles have been well developed, I shall operate in two stages; 1st, doing a preliminary tenotomy on the muscles and fascia which do not allow of extension and abduction, maintaining this gain by some form of extension apparatus; and then, when the wounds have healed, doing an arthrotomy. In the two cases operated on, I deepened the existing acetabulum by means of a Volkmann's spoon. I think, however, in future that the maintenance of reposition can be secured by resorting to more extensive tenotomies.

Success in the operation depends upon:—1. Perfect asepsis. 2. Avoidance of injury to the head and acetabulum. 3. Perfect removal of all causes which tend to drive the head on to the ilium. 4. The application of the head to the acetabulum, without the intervention of any portion of the sac; and, lastly, the maintenance of the abducted position, until the structures about the joint have adapted themselves to the new arrangement of the parts.

Drainage by thin strips of rubber tissue, carried into the capsule

should always be employed. The dangers of the operation are shock, sepsis and ankylosis. The after treatment should be carried out along the same lines as for the bloodless method.

The ultimate results, when successful, have been, useful joints, with from 2 cm. to 3 cm. of shortening. Motion is usually somewhat restricted.

Bradford's statistics for the 10 cases already referred to, 9 of which were submitted to open incision, are: 4 hips were firmly replaced, as shown by x-ray; 2 hips were firmly replaced, but no x-ray; 1 hip apparently replaced, as shown by x-ray; and 1 not submitted to operation. Relapse however occurs after the open, as well as after the bloodless method.

Case I.—A. C., female, aged 9, entered hospital February 14, 1902. Parents state that the child could not walk until 2 years old, and that at that time nothing unusual was noted. But a year and a half later, a gradually increasing limp, without pain, and without a history of trauma or disease, developed. The lameness has steadily increased until the present. The child does not suffer much pain, but is easily tired out after a long walk.

On walking, the child lurches forward on the left side with a characteristic waddling gait. The left leg is 2 inches shorter than the right and is less muscular. The left gluteal fold is not prominent, but a marked prominence corresponding to the head of the femur and lying behind the trochanter and above Nelaton's line can be readily made out. The upper border of the great trochanter descends on traction of the leg.

On February 28th, the patient was anesthetized, the capsule opened by Lorenz method, the misshapen head (flattened and semi-ovoid), after freeing the capsule from the neck, as well as the structures inserted into the lesser trochanter, was replaced in the deepened acetabulum with very great difficulty. The capsule was partially closed by catgut, drained by rubber strips, and the limb fixed in plaster of paris in an exaggerated abducted and slightly flexed position. By the end of the fifth week the wound had perfectly healed, at each change of dressing gradual abduction had been practised, until the leg was brought parallel with the other. At this time, in order to prevent ankylosis, which was to be feared, owing to the extensive deepening of the acetabulum at the time of operation, I did not apply the plaster of paris dressing, but was practising daily, passive motion. Measurement showed at this time less than half an inch of shortening. On April 12th, on exposing the limbs preparatory to employing passive motion,

I was considerably chagrined to discover a shortening of an inch and a half and a displaced head. I immediately put the limb up in extension, and later on tried to replace the head by the bloodless method, but I feel that while I have improved the position, the head does not lie in the acetabulum, and there is a shortening of ¾ inch.

Case II.—C. N., aged 4, female. Admitted January 28, 1902. The mother says the child was the first-born, and that it cried more or less constantly for the first four months. It walked at 15 months, with a decided limp, though no deformity was detected. The limp has continued to increase, though the child does not complain of pain even after running about a great deal. On walking, the child lurches to the left, pelvis tilted to the left, gluteal muscles of the same side flattened and broadened, well marked lateral curvature of the spine, the trochanter lies one inch above Nelaton's line, and the head of the femur lies behind and somewhat above the trochanter, and can only be felt indistinctly.

The child was kept in bed for some time, and by extension and abduction frequent attempts were made to stretch the contracted muscles.

On February 18th, operation was performed in the manner described in the previous case. On February 21st, the first dressing and drainage tube removed. On February 25th, owing to elevation of the temperature, a second dressing was done, and a superficial dermatitis, believed to be due to the soakage of the iodoform gauze with urine, was discovered. On March 2nd, the wound was perfectly healed and the leg put up in diminished abduction. April 1st, the patient was discharged, walking on a slightly abducted limb.

I had arranged to show this patient at this meeting, having reapplied the bandage last Saturday; but the father, who does not live in Montreal, refused to allow his child to remain in the hospital.

Careful examination at that dressing shows free movement in every direction, with a shortening of less than ¼ inch. It is interesting also to note that the child still walks with a limp, though the trochanter holds it position firmly on stepping.

Case III.—K. C., aged 8, female, entered the hospital April 14, 1902, complaining of an abnormal gait in walking and a deformity in the back. The peculiar duck-like waddling has been noticed since she began to walk, and is steadily getting worse. There is a very marked lordosis; besides a right lateral dorsal curve and a smaller left lumbar curve. The right trochanter is more prominent than the left; both buttocks flattened; the right gluteal fold is deeper than the left. The lordosis disappears on lying down, and there is free movement in both

hip joints. Internal rotation can be carried further with the right than with the left leg; external rotation further with the left than with the right. A very indefinite mass can be felt behind both trochanters, but the trochanters seem to move in the arc of a circle, on rotation, and they lie about 2 inches above Nelaton's line. The child shows evidences of rickets at the lower ends of the radii, costa-chondral junctions, and at the lower ends of the tibæ. Extension at first failed to cause descent of the trochanters, and *x*-ray plates did not help to clear up the diagnosis. I was at first inclined to look upon the condition as double coxa vara; but the next day, after resting in bed, forcible extension made the trochanters descend a full inch, and I was able to demonstrate the rotation of the femoral heads about the trochanters, establishing a diagnosis of double congenital dislocation. The parents refused to have any form of treatment attempted, and removed the child.

My experience is too limited to compare the results of these two methods of treatment; at the same time, I am convinced from the examination of the two cases in question, reposition other than by open incision would have been practically impossible, owing to the very marked hour-glass contraction, in one case scarcely admitting a lead pencil. I would like to emphasize the importance of :—

1. Preliminary stretching and tenotomy.
2. Free separation of the femoral attachments of the capsule.
3. Thorough separation of the structures attached to the lesser trochanter.
4. Drainage.
5. Proper fixation by a suitable bandage.
6. *Prolonged fixation* until structures have adapted themselves to the parts.
7. Exercise and gymnastics.

I wish to express my thanks to Dr. Shepherd for permission to use the specimen here shown, and for his kindness in drawing my attention to the article referred to; as well as to Dr. Evans, of Ottawa, who kindly sent me two of the cases reported.

HEMIHYPERTROPHY WITH MULTIPLE NEURO-FIBROMATA.*

BY

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J.M.B., aged two years and two months, was sent to the Winnipeg General Hospital suffering from a malformation of the left side of the head and face, this side being much larger in all dimensions than the right side.

Present Condition.—The left ear is nearly twice the size of the right, and from it there exudes a sero-purulent discharge. The external auditory meatus is so œdematous that it is impossible to see the drum membrane. Under the left mandibular bone is a mass of tissue, which is soft and elastic to the touch. It is apparently not adherent to the underlying tissues nor to the skin. No fluid could be withdrawn from this tumor by an exploring syringe.

This mass extends upwards beneath the left side of the tongue which is pushed upwards, backwards and to the right, giving an appearance somewhat resembling two tongues. The tumor formation also extends beneath the skin of the left cheek nearly to the angle of the mouth, and as high as the zygomatic arch; also behind the ear over the mastoid process and occipital bone and to a less degree down the side of the neck over the posterior triangle. The whole mass is movable to a limited degree, is soft, elastic, and here and there throughout its structure many small harder masses, about the size of melon seeds, can be felt.

The left alveolar processes of both maxillæ are very much thicker and larger than those of the right.

The left eye-ball is greatly enlarged as compared with the right, and there is a considerable degree of proptosis. The cornea is covered over with a dense nebula.

The hair of the left eyebrow is much coarser and more abundant than that of the right side; and the hair of the left side of the head is coarser and less inclined to curl.

Sensation and motion of the affected side are apparently normal.

The child otherwise is of normal development, but is very thin,

* Part of a paper read before the Students' Medical Association.

having lost flesh very rapidly, especially during the last month, although she takes her nourishment well considering the deformity.

Family History.—There are four brothers and sisters in the family, all being healthy, and there is no neurotic history in her ancestors.

Personal History.—The mother, who is a very intelligent woman, gives me the following facts as to the child's personal history: She states that the child was born with the left half of the face apparently swollen, and that soon after birth she had opthalmia neonatorum, which affected both eyes, but that she would open the left eye to light, as it was blind, although she could not open the right eye. She states that the left side of the face did not perspire as much as the right, and that it felt colder and would not flush up like the right side. The left eye from birth is stated to have been larger than the right, and of a blue color with a hazel-like opacity over the cornea. The right eye was dark brown in color. When about six weeks old the child had some spasms one day, which may have been a slight convulsion. She had a decided convulsion about January, 1899; also a slight convulsion again when about two years old. The child was never able to walk, but could sit up alone. Her intellect was considered sound, but she did not make use of it as soon as an ordinary child. She never appeared to pay attention to anything going on around her until about seven or eight months old, but as she grew older she apparently understood what was said to her and would play with the other children and laugh at them. She never talked, but the mother thinks she would endeavour to say "mamma," and she would indicate her wants by motions and gesture. From November, 1898, until the time of her death she suffered much from indigestion. The mother also thinks that the child was deaf in the left ear, which discharged from the time she was nine months old. The patient was drowsy and slept the most of the time until the stomach trouble began, after which she was very wakeful and cried. The labor at the time of the birth was slow but normal. The child never met with any accident nor injury. Apparently she did not suffer very much, if any, pain in the head, but had some discomfort in the left ear.

Notes.—While in the hospital the patient had a septic temperature, ranging from 99° F. in the morning to 102° F. in the evening.

Treatment.—She was given small doses of thyroid extract and her general condition treated. She gradually failed in strength and died August 5th, 1899.

Accompanying is a photograph which shows the more abundant development of the hair of the left side of face and head, as well as the

increased size of the left half of the face and ear; also the tumor under the tongue and the general appearance of the child.

We only secured permission to do a partial autopsy, at which a large neuro-fibroma involving all the cranial nerves which we were able to examine, was found, *viz.*—the facial, lingual, hypoglossal, glosso-pharyngeal, pneumogastric and spinal accessory, as well as the first cervical nerve.

These nerves were much enlarged, some of them being the size of a lead pencil and larger with tendril-like prolongations and convolutions of numerous bundles of nerve fibres, with nodular swellings at various points, which were intertwined in a tangled mass. The nerve trunks were more yellow in color than a normal nerve, and were embedded in an abundant amount of loose fibrous connective and fatty tissue. The nerves were traced from various cranial orifices nearly to their terminations, and were found enlarged throughout.

The left half of the superior and inferior maxillæ were much hypertrophied, being about twice the thickness of the right side. Unfortunately we were not allowed to examine the brain, and were unable to secure the bones of the cranium.

The above case is worthy of note, inasmuch as it may add some further knowledge to the "Trophic nerve function theory." It comes under a class of cases in which you find an exaltation of the normal trophic nerve function, and the condition is characterized by an overgrowth and new formation of bone, fibrous tissue, etc. Examples of this state may be met with in the "bony formations" seen in arthritis deformans, in multiple exostoses, in that rare form of bony overgrowth and tumor formations affecting the bones of the skull, known as leontiasis ossea, in acromegalia, and in the cases of unilateral hypertrophy of the skull; it being a good example of the last.

This is a rare condition, and as far as I am able to learn, only two or three similar cases have been reported. The normal trophic nerve influence has been sufficiently established by physiological research and clinical evidence, so that it is unnecessary to dwell on it further. Any aberation of it may be regarded as the essential factor of the pathological changes met with in a considerable number of diseases.

Besides the one mentioned above, in which the trophic force is exaggerated, there is a second group of cases in which this force is found to be in abeyance, and the diseases resulting are characterized by the retarded or arrested development of the parts of the skeleton concerned. Examples of this pathological process are found in the arrested development of the bones of the limbs, in infantile paralysis, in the

hemiplegias occurring in early life, in the muscles of the face, in congenital wry-neck, and in hemiatrophy facialis.

A third group of cases include those in which you have a perversion of the trophic nerve influence, and the diseases are characterized by degenerative and atrophic changes in the bones and soft tissues connected with the trophic nerve centres.

Examples of this class are to be found in the fragility of the bones of the insane, in the degenerative changes, which go to make up the affection known as senile arthritis and malum senile of bone; in osteo-malacia, in osteo-porosis or senile atrophy, and fragilitas ossium; in spinal athropathy or neuro-paralytic atrophy of bone, near joints, and in the pathological condition, known as Charcot's disease, as exemplified in certain diseases of the spinal cord, such as tabes dorsalis, myelitis, laceration of the cord, and degeneration due to compression.

Poumer included rickets in this class, and advanced a similar neurotrophic theory to account for its occurrence. A fourth group may be added, in which you find this trophic nerve force completely lost, and ulceration or gangrene resulting, as is frequently seen after nerve section.

In looking up the literature of hemi-hypertrophy facialis, I find that Alexis Thompson reported a case of unilateral hypertrophy of the bones of the left half of the head and face; the bones of the right side being normal. The affected side showed besides a general hypertrophy of the bones, a condition of hyperostosis, due to an over-active periostium. Associated with the various forms of overgrowth of the left side of the skull, there was found a very pronounced enlargement of the grooves, canals and foramina for the nerves and blood vessels on the same side, more especially of those which serve for the transmission of the different branches of the 5th nerve, *viz*:—The foramina rotundum and ovale at the base of the skull, and to an equal degree the supra-orbital, infra-orbital, malar and mental foramina in the bones of the face.

He said the enlargement of these foramina were undoubtedly associated with a corresponding enlargement of the nerves passing through them. The bony changes corresponded with the greatest accuracy to the area of distribution of the 5th nerve.

This association led him to the conclusion that it was a trophoneurosis, and that the specimen afforded sufficient grounds for the inference that there exist certain fibres in the 5th nerve, which preside over the nutrition of the bones to which they are supplied, and which when their function is exalted, may cause overgrowth and tumor formation throughout their area of distribution.

His case was that of a man, who died at 53 years of age in an asylum, his father had died of insanity, and there was a history of epilepsy major in the patient, since infancy. He could read and write, and had learned a trade, but after the age of 23, the fits began to tell on his mind and he became of an irritable, hot tempered and morose disposition, and later became very maniacal. Though his face was deformed, his expression was intelligent, and he could converse rationally, his articulation was slow and deliberate, his memory was good, and his sight and hearing were normal. He died comatose in the status epilepticus.

At the autopsy, the membranes of the brain were found healthy, except for a disk-like plate of bone found in the falx cerebri. The entire brain weighed 50 ounces, of which the left hemisphere equalled 16 ounces and the right 25 ounces. The convolutions on the anterior and superior aspects of the frontal lobe on the left side were flattened, atrophied and displaced by the large bony tumor. Nothing further was noted abnormal.

Dr. Thompson inferred that this case began in early life from the symptoms.

Another case, reported by Jonathan Hutchison, showed an unilateral overgrowth of all the bones of the right side of the face and head and limited precisely to this side.

The early history of his case was unknown, but the changes only became conspicuous in middle age. He calls the condition the converse of hemiatrophy facialis. He considered that hemiatrophy was a misnomer since it is not an atrophy in the sense of being a diminution of anything that previously existed, but simply an arrest of growth in an early stage of childhood.

He states that he had only seen one other case in a living patient, in which there was reason to believe that a similar condition existed, though to a much smaller extent.

The gross pathology of the nerves, as found in hemihypertrophy facialis is described by Warren as follows:—"A plexiform neuroma, which consists of numerous bundles of nerve fibres with nodular swellings at various points, bound together and intertwined in a tangled mass. They are held together by a loose connective tissue, that lies in a fold or folds of the skin, which is hypertrophied and pigmented and covered with a thick coarse hair. The tumor is congenital, and is usually situated on the scalp, neck or on the cheek. There is a thickening also of the connective tissue structures of the skin, particularly those surrounding the blood vessels and the hair follicles, such as you see in

multiple fibroma. The growth is regarded by many as a local elephantiasis of the nerves."

This pathological description applies in its entirety to my case, excepting that the lesion in this case is more general than in those previously recorded. It is of interest to consider the converse condition—hemiatrophy facialis—from a pathological standpoint, especially in regard to this case, where the lesion was found to be so extensive.

Hemiatrophy is a more common condition and consequently its etiology and pathology have been more studied. In it all the tissues of the affected part are atrophied, including the hair, bone, muscles, etc. Very different views as to its pathology have been advanced. Some suggest that it is due to a lesion of the connective tissue, which produces atrophy of the surrounding tissues, by interfering with the circulation. The majority of observers say it is due to some nerve lesion in the medulla oblongata, in the peripheral nerves or in the sympathetic system.

Virchow styles the disease "a neurotic atrophy of the face." Jonathan Hutchinson considers it to be due to an arrest of growth following an attack of morphœa of the 5th nerve in early life. Virchow's case at the autopsy showed a condition of interstitial neuritis of the 5th nerve. The motor and sensory ganglia of the nerve were unaffected, but the descending root of the nerve within the medulla oblongata was atrophied.

Bramwell said "that it was due to a lesion of the trophic rather than of the sensory or motor parts, and that because in his case sensation and motion were unimpaired, the lesion was of central origin. And it is difficult to suppose that a peripheral neuritis could so markedly impair the trophied functions of the nerve without at the same time producing more distinct disturbances of its motor and sensory functions, than are usually present. Still it must be allowed that the disease frequently develops after some local injury to the face, which is in favor of its peripheral origin." However, most authorities agree that the ultimate lesion is situated in the central trophic nerve cells, and that the nerves to the face pass through these ganglia and leave them through their axis cylinder processes. Destruction of these cells leads to degeneration and atrophy in the motor nerves and muscles, and inasmuch as there was atrophy of the temporal and masseter muscles in several cases reported, went to prove the lesion to be one of the 5th nerve.

Also in the cases reported, there was no anidrosis. This would go to establish that the vaso-motor nervous system was performing its function normally.

Now granting that facial hemiatrophy is the result of a nerve lesion, it must, I think, be allowed that the several cases reported point to the existence of a nerve apparatus which presides over the nutrition of connective tissue, fat, bone, etc., and which is separate and distinct so far as function is concerned from the motor, sensory, vaso-motor and secretory apparatuses. Formerly, it was considered that the lesion which produced hemiatrophy was confined to the 5th nerve, but the fact that in many or most cases of this condition, the half of the tongue on the affected side is also found to be markedly wasted, is of great interest, and has an important bearing upon the pathology of the disease. And as the multipolar cells of the hypoglossal nerve nucleus are considered to exert a similar trophic influence on the development and tonicity of the muscular fibres of the tongue, through the hypoglossal nerve, hence with hemiatrophy of the tongue also present the conclusion is that the lesion must involve these multipolar cells of the hypoglossal nerve nucleus or peripheral prolongations as well as those of the 5th nerve. Further, in support of the theory that the hypoglossal nerve nucleus is also affected in connection with hemiatrophy facialis several facts may be advanced:—In hemiatrophy of the face the facial muscles, which are supplied by the 7th nerve are not atrophied or only very slightly. In some cases of chronic progressive bulbar paralysis the loss of motor power is not directly proportionate to, or dependent upon, the degree of muscular atrophy which is present. In this disease you get a degenerative atrophy of the motor nerve cells of the medulla oblongata, similarly as you get the same change in motor nerve cells of the anterior cornua of the spinal cord in progressive muscular atrophy.

This lesion of the hypoglossal nerve centres although theoretically granted, still requires to be demonstrated. But if it is true that they are affected, then the theory that facial hemiatrophy is due to a lesion of the trophic fibres or trophic centres connected with the 5th nerve, is incomplete, and from analogical reasoning as demonstrated in the converse condition of hemihypertrophy facialis, as seen in my case, what Bramwell surmised, is correct *viz*:—"If it should be proved that in some cases of the disease the lesion involved a motor nerve (the hypoglossal) or its nucleus, it will further, I think, be necessary to allow that the lesion may probably in some cases be still more extensive."

ON THE OCULAR MANIFESTATIONS OF SYSTEMIC GONORRHOEA.

BY

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While apart from direct contagion a definite connection has long been noted between gonorrhœa and various ocular affections, our knowledge in this field has of late years become fuller and more rational through a better recognition of the systematic phases of specific urethritis and finer bacteriological methods of examination.

A study of the structure of the eye might lead one to think that Tenon's space, forming as it does a perfect serous ball-and-socket joint, would be, par excellence, the local situation for gonorrhœal trouble occurring in connection with the organ of sight; but with the exception of the case of Pucch, which occurred three weeks after the onset of a specific urethritis with the usual signs of swelling of the lids, chemosis, proptosis and fixity of the globe, examples of tenonitis secondary to gonorrhœa have not been reported.

Rare indeed are the cases of retinitis, neuro-retinitis, dacryoadenitis and keratitis, though examples of all these conditions consecutive to a general infection from a specific urethritis have almost certainly occurred.

It is rather in the vascular structures of the eye (the uveal tract and the conjunctiva) that systemic gonorrhœa expresses itself most markedly.

The manifestations in the uveal tract vary considerably in character. One sees first of all a pure inflammation of the iris with all the common signs which can hardly be distinguished from an iritis due to other causes. There is missing, of course, the condylomatous tumefaction not infrequently present in the specific form, and on the other hand the anterior chamber may be occupied by a gelatinous exudate which is somewhat characteristic of the condition. Foerster's experience was that exudates were not so rich or so quickly formed in this as in the specific variety; but though one's impressions are in accord with this view it can only be regarded as a rough generalization.

We meet with, further, the well-known serous cyclitis marked by dilatation of the pupil, cyclitic deposits on Descemet's membrane and a tendency to secondary glaucoma; and lastly, the so-called irido-

* Read before the Canadian Medical Association, September, 1902.

choroiditis, in which, in addition to the usual signs of iritis, one has diminished tension and marked impairment of vision from vitreous opacities consecutive to the choroidal disease.

The form of conjunctivitis which occurs in systemic gonorrhœa, though frequently mentioned in the text books since the days of St. Ives, and classically described by Fournier in 1866, is even yet not generally recognized by the profession. This so-called "metastatic conjunctivitis" is of much more common occurrence than the inflammation due to direct inoculation of the mucous membrane of the eye by the organism of Neisser, and the two conditions are to be carefully distinguished from one another. In the one instance we have simply an ocular manifestation of a general infection secondary to a specific urethritis; in the other a purely local contagion, which corresponds to the primary urethral inflammation in the first form and which may, like it, give rise to metastases in other parts of the body, as witness the fairly numerous cases of arthritis occurring after ophthalmia neonatorum.

Clinically metastatic conjunctivitis affects as a rule both eyes of the individual, and especially those parts of the conjunctiva known as the fornices. It is accompanied by a mucoid, or at most muco-purulent discharge and the subjective symptoms are characteristically slight out of proportion to the intensity of the inflammation. The disease runs always a favourable course and expends itself in a few days even though no special treatment be adopted. The corneæ are never implicated. Relapses are prone to occur, and as proof of its nature metastatic conjunctivitis is commonly associated with arthritic or iritic manifestations of the systemic infection and not infrequently alternates with these conditions.

This is indeed a very different picture from the violent and destructive inflammation due to direct inoculation; but what finally differentiates the conditions is the bacteriological examination. In a case of gonorrhœal ophthalmia one has no difficulty in demonstrating the presence of Neisser's organism by the simplest methods, but in the metastatic form of gonorrhœal conjunctivitis both coverslip and culture media give entirely negative results. The observations made in this field during the last few years have been so numerous and so competent that the question of there being really a metastatic form of gonorrhœal conjunctivitis seems beyond all doubt.

How frequent are the ocular manifestations of systemic gonorrhœa may be gathered from an analysis made of the records at the Royal Victoria Hospital:—Of 80 cases admitted for this condition, and suffering for the most part from articular affections, eight or ten per cent.

showed during their stay in the institution, well marked ocular symptoms. To be more particular, four of these presented a pure iritis; one case an iritis which was followed after an interval of time by episcleritis and hyperæmia of the iris; one more irido-chloroiditis with posterior synechiæ, vitreous opacities and diminished tension; and finally two metastatic conjunctivitis.

The description of these conditions has been embodied in my foregoing remarks; I will only add that in the cases of conjunctivitis bacteriological examination in one instance failed to reveal the presence of the gonococcus, while in the other pyogenic organisms (staphylococci) only were found.

As with the arthritic troubles so with the ocular affections, the interval which elapses between the primary infection and the occurrence of these conditions varies in different cases. Usually a period of three to four weeks intervenes. But in one of the hospital cases three days only elapsed, while in the others iritis manifested itself after eleven and thirteen years respectively, though in the intervals, to be exact, the patients had suffered from fresh infections and relapses of their joint troubles.

Commonly the eye manifestations follow those in the joints, but the sequence may be the other way about, inasmuch as in three of the hospital cases ocular changes were the first indication of a general infection.

The fact that in gonorrhœal rheumatism each fresh urethritis is almost certain to be followed by an even more intense outbreak of the condition is well-known and cannot be too strongly pointed out to those affected.

To the oculist, the question of the eye being the sole site of expression of a systemic gonorrhœa is of practical interest. There is probably no eye surgeon of any experience who does not know that this condition may exist, but there is undoubtedly a marked divergence of opinion as to the frequency with which it occurs. But, pending further enquiries, we have always before us the possibility, and we shall do well, as has been remarked elsewhere, to make a *careful* enquiry as to gonorrhœa in every obscure infection of the eye.

What the exact pathology of systemic gonorrhœa is has not yet been fully worked out. We must believe from the valuable clinical and pathological work in this field, that the gonococcus itself plays a very important role in the production of the condition, more especially since it has been shown that the organism of Neisser may at times assume pyogenic properties. The possibility of toxines producing inflammatory

phenomena cannot at present, however, be disregarded, and in this connection the following case is of interest, though here one cannot with certainty exclude a non-microbic process persisting after the death of the organisms primarily responsible for the inflammation.

The patient was a young man who died of acute dilatation of the stomach occurring from other causes in the course of a systemic gonorrhœa, which had come on one month after the onset of a specific urethritis. In the hospital the patient suffered from a polyarthritis, with which was associated a pure iritis of the left eye. At the post mortem, with Professor Adami's kind permission, I removed the affected eyeball and later subjected it to microscopical examination. Careful search, however, failed to reveal in the fibro-cellular exudate, which was richly present along the border of the ciliary body and pars ciliaris retinæ, any trace of micro-organisms.

A few remarks in regard to treatment. All precautions must be taken in connection with every case of conjunctivitis associated with gonorrhœa, until a diagnosis has been firmly established by means of the microscope, or at least strong clinical evidence. Metastatic inflammation of the conjunctiva, as before stated, runs always a favorable course and demands the simplest methods. Iritis calls for the use of atropine and not after days, but at once.

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ECTOPIC GESTATION; CONSIDERED CLINICALLY.*

BY

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The source of origin of ectopic gestation has been carefully sought for during many years and appears likely to afford a field for controversy for some time to come, as it cannot be decided until we know where the ovum becomes impregnated and what is the nature of the site required for its implantation and growth, whether impregnation occurs in the uterus, tube or ovary, and whether or not it requires a healthy mucosa or a surface more or less completely denuded of this membrane for its location.

In Reed's[1] text book, we are told that we can certainly put inflammation out of the question and Sutton and Giles[2] tell us "that a healthy Fallopian tube is more likely to become gravid than one which has been inflamed." On the other hand, Kustner[3] claims inflammation to be the sole cause, while in 1893 Von Schrenk[3] traced the cause in 93 out of 610 cases and found that of these 70 per cent. were due to inflammation and that in the other 30 per cent. some abnormality of the tube or ovary was present.

In 1896, Schauta[3] found that, in 9 out of 43 cases, gonorrhœa had been present and Wyder found perimetric adhesions in 6 cases.

The fact is that we so rarely see a specimen until the anatomical relations of the parts have become so distorted by stretching, rupture and hæmorrhage, and the history of previous attacks of venereal disease is so very difficult to obtain, it is almost impossible to arrive at a conclusion regarding the cause. It is more than probable, however, that a previous inflammatory attack at least renders a woman more liable to the trouble than where the parts have always been healthy.

The symptoms of an unruptured ectopic gestation are as a rule so slight and vague that the patient rarely seeks medical advice. There may or may not be one or more periods of amenorrhœa, or one period may have just been finished when a slight dribbling of blood occurs, with perhaps shreds or pieces of membrane, and is accompanied by dull pain in one iliac region, together with more or less nausea or perhaps actual emesis. On making a pelvic examination of this patient a small ovoid mass is to be felt to one side of the uterus, probably at some little

* Read before the Canadian Medical Association, Montreal, Sept. 17, 1902.

distance from and connected with by a soft rounded band, the proximal part of the tube. This mass is rather soft and boggy, not tense and resistant as in the case of a cystic ovary, and is not tender. These symptoms may go on for two or three months and then subside, the ovum having died, or in rare instances the woman may go to full term with every sign and symptom of a regular uterine pregnancy. Sinclair records a case where the patient went to the sixth month without rupture, and the following case occurred in my own practice. The patient was a multipara, aged 30, who had been married for seven years. She last menstruated on January 26th, 1901. In March, she began to have headache and morning sickness, both continuing until early in June. The breasts became full and tender, and she thought that she had a normal pregnancy. On the night of July 3rd, *i.e.*, after about six months' absence of menstruation, while in bed, she was seized with severe pain in the epigastrium and began to vomit. This continued throughout the night and between five and ten a.m. she had a chill and three fainting spells, the room appearing to her quite dark. When first seen she was in a state of collapse with rapid, weak pulse, pallor and cold extremities. On making a bimanual examination, the cervix exhibited the usual softness of pregnancy with patulous os. Occupying the middle line and directly continuous with the cervix a rounded mass of the size, shape and consistence of a five months' pregant uterus could be felt. It was mobile and not sensitive. Interference was postponed, and during the afternoon, rhythmic pains, closely resembling those of labour, began and continued until she was removed to hospital late at night. As she was in a very bad condition and everything pointed to a threatened miscarriage with possibly some abdominal condition, it was decided to empty the uterus and then to open the abdomen. This was heroic treatment I acknowledge, but we were misled in our diagnosis by, first, everything pointing so distinctly to intra-uterine pregnancy, and, secondly, by the fact that just before retiring on the night of July 3rd, she drank a large quantity of ice water while very warm. On exploring the uterus we found it to be but slightly enlarged, empty, and lying embedded in the above mentioned mass. The diagnosis of a ruptured ectopic gestation was now easy, and on opening the abdomen, a ruptured tube, from which had escaped a five month's fœtus with its membranes, was removed. The patient made an uninterrupted recovery. This case was very instructive as showing how a normal pregnancy can be closely simulated by one of the most dangerous affections from which woman can suffer, and is a strong argument in favour of making a most careful examination of all supposedly pregnant women as soon as they place themselves under one's care.

As I have previously stated, it is seldom that a case goes as far as this before showing an unmistakable danger signal. Usually between the 6th and 12th weeks of gestation, the patient is seized with an agonizingly sharp pain in the affected side accompanied by more or less profound collapse, the pulse becoming rapid, small and weak, and the face blanched, with sighing respirations. Vision is affected, everything appearing to be blurred and indistinct. A feeling of tenesmus may be experienced and micturition may be interfered with to such an extent that the patient is unable to empty her bladder. On making an examination of the pelvis and lower abdomen, the cervix will be found to be soft and the os slightly patulous, the uterus somewhat enlarged and pushed to one side by a small mass which can be vaguely felt by the examining finger. Often there will be noticed a rigidity of the abdominal wall over the diseased area, but this is not quite so constantly present as in a case of pyosalpinx.

Grandin[4] of New York thinks that where much blood has been extravasated one can feel that the temperature is higher over the part containing the blood than over the rest of the abdomen. If this observation is correct, it will prove of great value in assisting in the diagnosis of intra-abdominal hæmorrhage, but, personally, I have never been able to notice this sign.

It must be remembered that neither the presence of normal menstruation nor the absence of a discharge of blood from the uterus must be regarded as an absolute sign that the case is not one of ectopic gestation. In many cases there is absolute regularity of the menstrual flow in every way, and, while in the majority of cases, there is the dribbling of blood above mentioned, there are numerous instances where the first sign of trouble has been the sharp acute pain of either rupture of the gestation-sac or else of a tubal-abortion, *i.e.*, the expulsion of the ovum into the general peritoneal cavity from the open fimbriated end of the tube. Tubal-abortion can, of course, only occur in the earlier months when the ovum is implanted near the outer end of the tube, which has not as yet been closed.

The symptoms of this condition are practically the same as those of rupture, and, just as in the intra-uterine variety, it may be either complete or incomplete, both being equally dangerous. There is, however, more tenderness over the abdomen than in the case of a ruptured sac.

A very typical case of tubal-abortion is related by Spinelly[6] of Naples. The patient, a nullipara, consulted him for pain in the lower abdomen. She believed herself to be two months pregnant, having missed two periods. The night before he saw her, coitus was followed by a sharp pain in the left iliac fossa, contractions of the vagina, bladder and

rectum, and cramps in the left leg. She also had nausea and vomiting. Local examination revealed a soft cervix and an empty and everted uterus. About three centimetres to the left side of this organ was a rounded, soft, elastic tumour the size of a mandarin orange. The mass was so soft and tense that it threatened to rupture. Inspection of the vagina and cervix demonstrated the mucous membrane to have the violet tinge so common in pregnancy. Operation was advised, but was refused until later on when rupture both rendered it imperative and confirmed the diagnosis.

Although the diagnosis of a ruptured ectopic gestation is not usually a matter of great difficulty, yet there are various conditions which may simulate it. Of these the commonest are:

1. Uterine pregnancy with a threatening of abortion. Here careful palpation and the absence of signs of internal hæmorrhage will usually enable one to escape falling into an error.

2. Pus-tube which has leaked and set up localized peritonitis. Presence of temperature, excessive tenderness, history of gonorrhœa or sepsis, etc.; will aid you.

3. Tumour with twisted pedicle will give a much firmer and a more resistant mass.

4. Pelvic hæmatocele, but this is usually due to a ruptured gestation sac.

5. Pregnancy in a rudimentary horn of the uterus demands the same treatment, so that its differentiation is unnecessary.

If not interfered with, the prognosis of ectopic gestation is undoubtedly exceedingly grave. Certainly in some instances the ovum dies and either remains as a dried up mummified mass, is entirely absorbed, is discharged through the bowel, bladder, vagina, or even the anterior abdominal wall, or else becomes infected and so forms a pelvic abscess. Even where the fœtus has gone to full time, it may remain perfectly quiescent for years.

Champneys[7] reports 75 cases of ectopic gestation (including pelvic hæmatoceles) out of which 34 or 45.3 per cent. were not interfered with, all recovering; 14 were treated by vaginal incision and one sac removed per vaginam; 26 were operated on by the abdominal method, and of these 7, or 26.92 per cent. died. As such a large proportion recovered under simply rest in bed or a vaginal incision in order to empty an hæmatocele which had not resolved with sufficient rapidity. Champneys does not take such a gloomy view of ectopic gestation as I think the majority of us do. Of course his operation mortality is very large, but we must remember that he only advocates the use of the

knife where the patient has been given the chance to get better without it.

Certainly my own experience is very greatly at variance with the above. Over twenty cases of ectopic gestation have passed through my hands and the only patient upon whom I was not allowed to operate died just within twenty-four hours from the time of rupture.

The treatment will vary according to circumstances. Champneys' rules are:—

1. "Cases of early, unruptured, living tubal gestation should be operated on without delay.

2. Cases of rupture into the peritoneal cavity, without diffuse hæmorrhage, should be dealt with according to circumstances;

(*a*) If hæmorrhage still continues when they come under observation, some cases ought to be subjected to operation, taking into consideration the probability of limitation and encapsulation of the blood continuing, and the state of the patient at the time.

(*b*) If seen after hæmorrhage has ceased, they should be treated expectantly.

3. Cases in which the blood has been encapsulated by adhesions, or by the broad ligament, should be treated expectantly.

4. Hæmatoceles which refuse to be absorbed in a reasonable time should be opened, emptied and drained."

Theoretically, these rules are excellent and to be endorsed by all conscientious gynæcologists, but practically are very difficult to follow. In regard to rule 2, sec. a, it is not well to wait too long to see if the bleeding will be arrested by nature. If you do, you will lose a very large proportion of your patients. Champneys himself admits that five out of the seven fatal cases were "possibly prejudiced by delay." One of my own two fatalities was due to this very cause; the patient entered hospital in the evening, and the operation was postponed until the next morning as she had some temperature, and her pulse was under 100 and of fair volume. She died from shock a few hours after operation.

Certainly one should remove an early, growing, unruptured tubal gestation-sac as soon as possible. Just as assuredly should one cut down upon and remove, as soon as diagnosed, a ruptured sac unless several hours have elapsed since rupture and you are confident that all hæmorrhage has ceased, in which event, one should watch the case carefully and be ready to interfere immediately upon the ovum showing any tendency to increase in size. Even if the hæmorrhage has ceased, it is better to operate at once if your patient cannot be kept under close observation. There is more risk in delay in these cases than in

immediate operation, shock or no shock. This latter condition is due to a great extent to hæmorrhage, and will only be more aggravated than otherwise by the continuous loss of blood. When seen in time, this condition yields the happiest results from operation of any in the whole domain of surgery, and time and again one sees patients who are in an apparently hopeless condition restored to their field of usefulness as mother, wife or both, by bold and prompt surgical interference.

The immediate rupture is to be treated by placing the patient in the recumbent position with the pelvis higher than the head, the local application of ice to the lower abdomen, and the administration of a dose of morphine, say gr. $\frac{1}{4}$. The lower limbs may require to be bandaged. All stimulants are absolutely contraindicated. This treatment is simply temporizing while preparing for operation. It is an entirely different thing where the patient is not seen until some hours or days after rupture, hæmorrhage has ceased and you can keep in constant touch with her. Here, a course of treatment similar to the one advocated above will often work wonders and cause absorption of any clots which have been formed. If any stimulant is required, none but normal saline solution per rectum is indicated as it simply takes the place of the blood lost, and is less likely to be followed by a resumption of the hæmorrhage than where alcohol is used.

Having decided that operation is necessary, how are we to get at and remove the offending member? In the first place, we will consider the question of the unruptured sac. Here I think it is not a matter of much difference whether the attack be made by the abdominal or the vaginal route, and the operator may be allowed to choose whichever method he affects. After rupture has once occurred (unless we have to deal with a small, well defined hæmatocele, which will be considered later) I think there is no doubt but that the abdominal route presents numerous advantages over the vaginal. By this route, one can reach the danger point more quickly, one can have all the room required, sight can be of more service, and the abdominal cavity can be more readily cleared of its clots. The abdominal wall can also be much more efficiently rendered sterile than the vagina.

Spinelli[6] advocates preparing the patient for an abdominal section as well as vaginal. Where there is any doubt, he performs a posterior colpotomy, so that he is enabled to explore the pelvic contents digitally. Where the abortion has been complete, he simply clears out the pouch of Douglas, but when incomplete he removes the tube through the vaginal incision. When he has diagnosed a ruptured tube through this incision, he prefers to remove it by means of an opening in the anterior abdominal wall.

This previous vaginal incision I consider to be rather a waste of time. If you have excluded uterine pregnancy or hæmatocele, then the case is one of cornual pregnancy, ectopic gestation, small tumour with a twisted pedicle, or salpingitis, all of which are treated more satisfactorily by the abdominal route, which therefore should be adopted from the first, as every moment's delay in exposing and closing the rupture is of vital importance to the patient.

In the case of a pelvic hæmatocele which will not resolve under hot douching, rest, etc., the best treatment is to thoroughly incise it per vaginam, wash out the clots by means of a gently flowing stream of solution and drain. Even here, however, an abdominal section may be required owing to the removal of the clot allowing the torn vessel to re-open and so permitting a return of the hæmorrhage. In one of Champenys' cases, the mass was punctured per vaginam, apparently with a view of turning out the clots, but the condition was found to be such that the abdomen was opened at once and a gestation-sac removed. The patient died in a few hours. Again, Voituriez[8], after emptying a posterior hæmatocele, per vaginam, had to close the bleeding vessel through an abdominal incision next day as the sac had refilled with blood.

If the patient does not present herself to the doctor until the pregnancy has reached the seventh or eighth month, and everything is progressing satisfactorily, are we to kill the fœtus, to wait until some time after it has died, to attempt its immediate removal, or to allow it to go to full term in hopes of delivering a living child? We have no satisfactory method of causing the death of the fœtus without injuring the mother. Formerly, compression of the abdomen, the injection of drugs into the sac, electricity, even syphilizing the patient were tried, but thanks to the brilliant advances made in surgical technique, we can now decide upon allowing the gestation to proceed to full term (if it will) and then to have our efforts rewarded by saving both mother and child.

Dunning[2] has collected some interesting statistics regarding the treatment of an ectopic gestation which has been allowed to arrive at maturity. Out of 25 cases where the patient was operated on while the child was alive, 15 mothers recovered and 10 died, 60 per cent. were successful, whereas out of 33 cases in which operation was deferred until after death of the fœtus, only 57·7 per cent. recovered, thus showing results in favour of operating while the fœtus is alive. Carlier et Qui[10] have also pronounced in favour of this latter proceeding. In cases coming under this category, the placenta, of course, is still functionating and is attached to the sac wall. It is better not to interfere with this

on account of the hæmorrhage which is apt to be set up, but instead, to stitch the sac to the margins of the incision and pack it, thus allowing the placenta and membranes to come away piece by piece.

Some operators claim that in order to prevent a recurrence of this condition, we should sterilize the patient by removing both sets of appendages. This is a perfectly unjustifiable proceeding, one of my own operations for a ruptured ectopic gestation being followed by two normal pregnancies. The field of operation and everything brought into contact with it ought to be rendered as sterile as possible, but the patient never!

N.B.—Also published in *American Gynæcology* for October.

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A CASE OF PURPURA WITH RECURRENT ATTACKS.*

BY

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The patient concerning whom this report is written is eleven years of age and first came under observation when five years old.

Her family history is not available since she has been in one of the benevolent institutions since earliest childhood.

During the past six years she has been the subject of fully six attacks of purpura, all well marked though presenting considerable variation. Besides these pronounced attacks her skin has often showed numerous purpuric spots here and there upon it.

In 1896, when her case first attracted my attention, the attacks were not so severe as more recently. She would be pale and listless for a few days, decline to take her food heartily and suffer from headache. At such times purpuric areas, variable in size from petechiæ to those as large as the child's hand, would appear over limbs and body. There were no signs of visceral complication and the eruption was not raised above the surrounding skin. The larger purpuric areas would feel thicker and firmer than the flesh not so affected. During her stay in hospital on this occasion she took whooping cough and remained several months under hospital care. She had several rather peculiar rises of temperature, lasting for four or five days and accompanied by signs of bronchitis. A severe epistaxis requiring plugging occurred while in the hospital.

In April, 1899, many of the children in the institution came down with measles and she was affected at the same time. The eruption, while showing the typical features of measles, largely took on a purpuric character in this case, while no other case showed such a tendency.

In November of the same year, she had an attack of purpura quite different to any yet experienced. She came into the hospital complaining of hæmorrhage from the bowels. For two days or so before coming to the hospital she had felt pains over the stomach and abdomen, and on the day of admission blood was passed per rectum. A few blood-stained stools were passed during the next few days. At no

* Read before the Montreal Medico-Chirurgical Society, October 17, 1902.

time did we find evidence of a large quantity of blood in the stool. Petechiæ covered the body, arms and especially the legs. Upon the legs there were several large spots varying from the size of that of a ten cent piece, of dark brown colour and a few almost black. From the middle of the dorsum of the left foot to the toes, a large irregular purpuric spot was noted, varying in colour from a blue to a yellowish-brown. The gums at their margins showed signs of hæmorrhage. The abdomen was somewhat full, but was not tender. The spleen was not palpable. The urine was hæmorrhagic at first. The patient had bronchitis, presenting the usual physical signs of that disease; occasionally the sputum was blood stained. After being in the hospital for two weeks, she suffered one night from severe pain in the left side below the costal margin, and it was feared that another severe intestinal crisis was at hand. It was not followed, however, by any signs of hæmorrhage or pneumonia. The bronchial condition improved, the urine cleared, no further hæmorrhage took place from the bowels, and beyond a few small fresh spots on the skin, this attack passed off without further event.

She was discharged on December 14, 1899, and again came for treatment on the 17th of the following March, after three months. The "spots upon the skin" appeared very suddenly with itching. There were no premonitions. The eruption at this time was quite different to that observed during the previous attacks. It was distributed over face, neck, trunk and upper extremities. While petechiæ beset the skin of these parts, the most striking feature of the eruption was the urticarial-like nodes of variable size. They were sharply defined, hard, centrally of a deep red colour and distinctly elevated. When they first appeared the central portion was white, the periphery bright red, hyperæmic. Later the central portion became of a dark red and was covered with a scab, while peripherally the affected area became darker in colour, and to the feel infiltrated. These urticarial-like nodes or areas varied as to size and colour. As time passed on it was interesting to note the changes of colour seen in these areas. The central portion became much darker, the surrounding area lighter in colour, and here were seen numerous small punctate spots, as if numerous hæmorrhages made up the peripheral zone. The hardness disappeared with the gradual change of colour similar to that seen in contusions. There were no visceral signs in this attack and the urine was free from albumin.

Purpuric spots have come out from time to time upon the patient since March, 1900, but she has not been in bed on that account. In September, 1902, she was seen with these spots upon her and what

you see to-night remains from this attack. There are several points which may be interesting to note.

(1) There has always been a tendency for a slight bruise to be followed by marks. (2) The eruption has been purpuric and macular and for the most part petechial. Annular forms have been seen as well as nodular forms. (3) There have been skin and mucous membrane hæmorrhages—gums, buccal mucous membrane, bladder and bowel. (4) When she had measles an hæmorrhagic eruption was present. (5) Bronchitis has been observed several times. (6) Blood cultures taken on three occasions were negative, while the hæmoglobin richness in 1900, was 75 per cent. (8) Recurrence is a marked feature of the case. (9) There have been no joint symptoms. (10) The heart shows no signs of disease.

The classification of this case presents some difficulty. If it were possible to isolate the attacks, we might might say that we have had good examples of simple purpura, purpura hæmorrhagica and Henoch's purpura. Indeed, it seems that one lesson at least is taught by this history, *viz.*, that a little more or less of the same determining cause of purpura induces a grave or mild attack, a subcutaneous hæmorrhage or a subcutaneous discolouration, or both of these greatly accentuated.

SEMI-AUTO-ETHERIZATION.

A DEMONSTRATION TO MEMBERS OF THE CANADIAN MEDICAL ASSOCIATION OF AN IMPROVED METHOD OF INDUCING ETHER ANÆSTHESIA FOR SHORT OPERATIONS, AT THE ROYAL VICTORIA HOSPITAL, SEPTEMBER, 1902.

BY

F. BULLER, M.D.

The opponents of ether as a general anæsthetic pretend that the difficulties and unpleasant things liable to happen during its administration and afterwards are serious objections to its use. I purpose showing that all the objectionable features can be eliminated by a little care and some modification of the usual method of administration. I have practiced this modification for the past twenty-five years, always with the most satisfactory results and hope that others may be induced to try the same plan, and so greatly add to the safety and comfort of their patients—at least in all short operations requiring general anæsthesia such as are of frequent occurrence in the various branches of surgery.

The objections commonly urged against ether are :—

1. It is disagreeable to the patient.
2. It is a time-consuming anæsthetic as compared with others.
3. It induces excessive secretion of mucus with all its disagreeable consequences.
4. That patients taking it are apt to struggle and become violent.
5. It is apt to cause excessive cyanosis and to induce so much congestion of the cerebral circulation that it becomes under certain circumstances positively dangerous.
6. It is liable to be attended or followed by severe vomiting and great distress if not danger to the patient.

These are the chief points raised by those who argue against the use of ether as an anæsthetic. I now hope to show you that ether can be administered without causing appreciable discomfort; that two or three minutes is all the time required to induce anæsthesia; that the excessive secretion of mucus can be avoided; that the patient does not struggle or become violent or cyanosed, nor excessively congested about the head and face, nor is there vomiting or distress of any kind as an after-effect; moreover, the quantity of ether used for an adult does not ordinarily exceed one or two ounces for minor operations.

I wish first to call attention to some of the differences between chloro-

form and ether as anæsthetics. In regard to the first it is generally conceded that it cannot be administered safely excepting when the patient is in an approximately recumbent position, and that its chief danger lies in a tendency to depression of the heart's action. In this latter respect ether is the antithesis of chloroform and is actually used in certain cases of emergency as a prompt and energetic cardiac stimulant. For this reason you will readily understand there is no indication, and no valid reason, for making the patient lie down when inhaling it; on the contrary the position may and actually should be, as regards the body, perfectly erect, such as the sitting posture in an ordinary chair, and this is the position I always select when administering ether for short operations. This gets rid of the troublesome mucus in the throat and places the respiratory system in a normal condition and in a position in which there is always a tendency to assume where difficulty in breathing is experienced. Hence there is no struggling, no cyanosis, and very little of any congestion of the head and face.

The second feature of my method, if I may be allowed to call it so, is the care taken to secure the patient's co-operation. I use as an inhaler, a truncate leather cone, with some cotton wool inside and an ordinary towel folded transversely, and the square thus formed stuffed at the centre into the cone, the peripheral portions being wrapped around the same and held by an elastic band. Into the clean cavity thus formed a sufficient quantity of ether is poured, say 1½ or 2 ounces for an ordinary adult, and the patient sitting in the chair is directed to hold the inhaler over the mouth and nose as closely as possible, with permission to withdraw it if the sensation is too "choky"; with positive assurance that it is perfectly safe, and a little encouragement, the patient will in a few moments continue to take full inspirations until consciousness is lost. When the hands drop and the breathing is heavy and regular, a short operation can at once be performed without pain, and in a minute or so the patient is awake and feeling as well as ever.

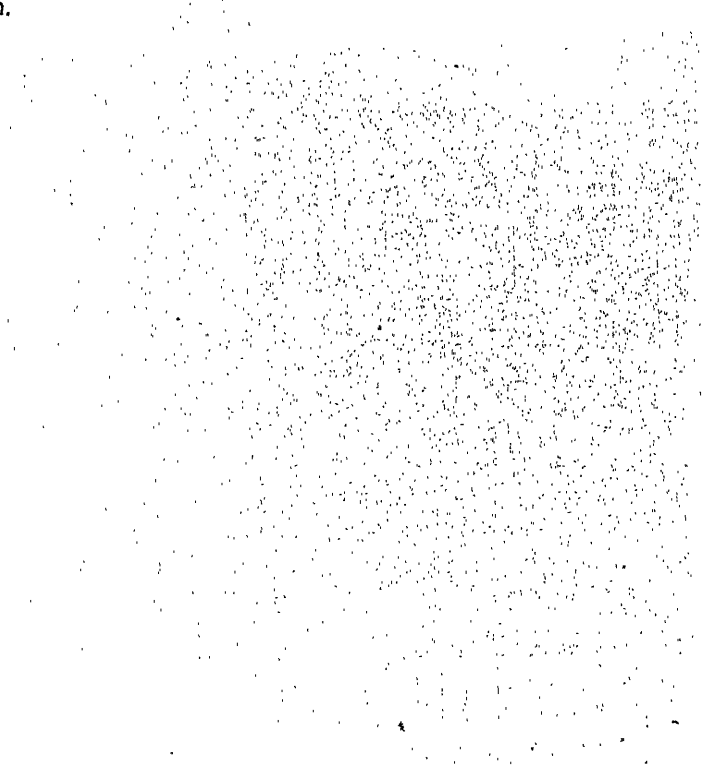
If more profound anæsthesia is required the cone is simply held in place until anæsthesia is complete and passes beyond the stage of struggling which occurs when ether is administered in the ordinary way, but which is eliminated more or less completely by auto-administration in the sitting posture.

I use the same method when complete and prolonged anæsthesia is required. The patient, of course, being laid down when sufficiently under the anæsthetic to remain quiet. I have so far never met with an adult patient who could not be readily managed in this way, and I have never had the slightest unpleasant experience with ether thus administered. Time and again patients have come to me saying they

could not take ether, and often their doctor has told them they must not take an anæsthetic on this account; others have suffered so much in taking ether that they could never make up their minds to go through it again. To such persons I say, "that which I am going to give is the best thing in the world for a weak heart, you need have no fear on that account. You take it yourself and stop at once if you find it disagreeable." Needless to say they never do stop.

The cause of all the fear of ether is the unnecessary discomfort, associated with the manner in which it is administered, and the thoughtlessness of medical men who do not recognize radical differences between the action of ether and chloroform, forgetting that ether is a cardiac stimulant and not a depressant as is chloroform and some other similar anæsthetics.

Ether was administered to two patients before the members of the Association and in each case a short operation performed. The demonstration perfectly illustrated all that was claimed for this method of etherization.



RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Paratyphoid Fever.

COLEMAN and BUXTON. "Paratyphoid Infections." *Amer. Jour. Med. Sci., June, 1902.*

JOHNSTON, WM. B. "Paratyphoid Fever; Report of Four Cases; Analysis of all reported Cases." *Ibid, August, 1902.*

HEWLETT, A. W. "Report of a case of Paratyphoid Fever." *Ibid.*

LONGCOPE, W. T. "A case of Paracolon Infection." *Ibid.*

GRUNBAUM, A. S. "A Preliminary Suggestion for the more Systematic Study of Typho-Coloid Fever." *Brit. Med. Jour., Sept. 20, 1902.*

The interest awakened in the study of the reaction of other micro-organisms by the discovery and adoption of what is known as the Widal reaction in typhoid fever, has resulted in a demonstration of new forms of infection, presenting a case-picture scarcely distinguishable from that due to the bacillus typhosus. In reviewing any considerable number of cases classed as typhoid fever in the different centres where the serum reaction has been faithfully done, one may find a small percentage in which the reaction above noted is constantly negative, and yet there appears no other reason for changing the diagnosis. Careful bacteriological study of a few of these cases has shown that they are due to an infection with an organism, a bacillus intermediate between the bacillus typhosus and bacillus coli. Widal, who first accurately described this organism, called it the bacillus paracoli. Schottmüller substituted the name paratyphoid bacillus and suggested the term paratyphoid fever to designate those cases where such an infection seemed to be the cause of the fever. Grunbaum, altering the terminology somewhat, prefers the term typho-coloid applied to such conditions. However the terms may differ, all observers seem looking in the same direction and quite unanimous in the opinion that there

is a disease in almost all clinical effects like typhoid fever, and caused by organisms intermediate in character between the typhoid bacillus and the colon bacillus.

The following table with slight modifications has been copied and serves to show in the main how closely the bacteriology in two cases studied by Johnston conforms to that of typical typhoid, and how the organism found resembles the bacterium coli.

(1) Morphology, motility and staining (no attempt to stain flagellæ).....like B. typhosus.
(2) Agar plates and slants..... " " "
(3) Gelatine stab..... " " "
(4) Potato..... " " "
(5) Bouillon flasks and tube..... " " "
(6) Durham's medium.
  (*a*) Case II. Trace of indol after seven days incubation, observed on one occasion only.
  (*b*) Case I. No indol.
    (*a*) Resembles B. coli slightly, (*b*) like B. typhosus.
(7) Litmus milk, like B. typhosus. In case II there was a slight alkalinity after three weeks growth, not observed again.
(8) Glucose agar. Like B. coli, large amount of gas after eight hours incubation.
  (*a*) One per cent. glucose bouillon, profuse gas production.
  (*b*) One per cent. lactose bouillon, no gas production.
  (*c*) One per cent. saccharose bouillon, no gas production.
  Like B. coli in producing gas with glucose.
  Like B. typhosus in not producing gas with lactose and saccharose.

These tests were compared with those of Gwyn's in a similar case with identical results, while Cushing's bacillus "O" differs only in the early alkalization of milk. It was found on subjecting all other obtainable paratyphoid organisms to this test, that they were thus roughly divided into two very similar groups.

(*a*) No terminal alkalinity, or a long delayed reaction.

(*b*) Terminal alkalinity in two or three weeks.

This grouping, however, from another consideration appears to be of little significance. Further into the bacteriology of these cases we need not go more than to say, that it seems that the paratyphoid bacilli differ from the B. typhosus, B. coli and B. dysenteriæ, and they are closely related to that group of organisms of which B. enteritidis, B. psittacosis, B. morbificans bovis and B. of hog cholera, are members.

It is thought by some, however, that one day these intermediate bacilli will be found pathogenetically identical.

Clinical Features of Cases already reported.

According to Johnston (August, 1902) there are in all 26 cases of paratyphoid fever recorded. We may say that about thirty have been studied and reported upon up to this date. Among the earliest cases are those of Achard and Bensaude, reported in 1896, that of Gwyn, observed in 1897, of Cushing in 1898, and those of Schottmüller in 1900 and 1901. Several have been reported in 1900 and 1901 and 1902, both in the old and new world.

Longcope remarks in his paper upon the subject of paracolon infection, that "from a study of the cases so far reported it is evident that they represent practically the same affection caused by a bacillus or group of bacilli, which differ materially from both the colon and typhoid groups, but have a close relationship to the enteritiditis group. The clinical symptoms are those of a mild typhoid fever infection, or more often of typhoid fever. In fact it is frequently impossible on clinical grounds alone to distinguish them from the latter disease. The general malaise, diarrhœa and temperature curve, together with the enlargement of the spleen, rose spots and diazo reaction, form groups of symptoms and signs which would under ordinary circumstances render the diagnosis from typhoid fever impossible. Relapses may occur, and even the complications are those common to typhoid fever."

There seems to be no necessity after this comprehensive paragraph to enter into the details of many of the case reports presented. Several points of interest, however, remain to be touched upon.

(1) Herpetic eruption was noticed in two of the reported cases.

(2) There is satisfactory proof of a double infection with both typhoid and paratyphoid bacillus.

(3) The Widal Gruber reaction is not present in the paratyphoid, but may be present where a double infection occurs.

(4) The disease has proved fatal in two cases, which do not afford sufficient material to draw broad conclusions regarding the pathology, but as far post mortem lesions were wanting in the intestines, lymph glands and spleen.

(5) A chill ushers in the febrile state, while critical termination of the temperature was found in three cases. Sixty-two per cent. of cases had diarrhœa.

(6) The sera of patients having this infection do not agglutinate typhoid bacilli in any but the lower dilutions and often not in these, while they agglutinate the organism with which the patient is infected.

(7) In cultures from blood, urine and fæces an intermediate bacillus has been isolated.

Grunbaum suggests that in those cases where a negative reaction is found with the B. typhosus that,

(*a*) The reaction should be tried on bacilli of the intermediate group.

(*b*) Examine the blood, urine and fæces for bacilli of this group.

(*c*) Blood counts especially for leucocytes are recommended.

(*d*) Test the urine for the diazo reaction.

W. F. Hamilton.

How to Recognise Tubercular Changes in the Apices of the Lungs by Percussion.

HENRY E. STADLINGER, M.D. "How to recognize Tubercular Changes in the Apices of the Lungs by Percussion." *Phila. Med. Jour., Sept. 13, 1902.*

The writer believes that an earlier diagnosis can be arrived at by carefully mapping and comparing the resonant areas at the apices of the lungs.

The respiratory mobility of the bases is first determined, the position of full inspiration and expiration being marked with a pencil. The greater the mobility the less are the chances of apical involvement.

If a difference in pitch is present at the apices it is unnecessary to go further. If, however, no difference is detected, the apex resonance is mapped out in the following way. The inner border line of the apex is mapped out from the sterno-clavicular joint over the root of the neck to the back, and the outer border of lung resonance is then mapped out, starting in the supraclavicular space and passing back to the scapular region. A comparison of the distance between the inner and outer border of lung resonance shows a diminution on the affected side, and this in the absence of any difference by the ordinary method of percussion. It is often possible to distinguish in which portion of the apex the pathological process is situated.

The directions are rendered clear by explanatory figures.

The Relations of Diabetes Mellitus to Lesions of the Pancreas.

OPIE. "On the relations of Chronic Interstitial Pancreatitis to the Islands of Langerhans and to Diabetes Mellitus." *Jour. of Exper. Med., Vol. 15, parts 4, 5.*

The opinion that disease of the pancreas plays an important part in the production of diabetes has long been gaining ground.

Minkowsky and VonMering proved that a rapidly fatal form of diabetes develops in dogs after extirpation of the pancreas, and in a

case of Bull's diabetes developed after the surgical removal of the organ in man. If a small portion of the organ is left diabetes does not develop. The inference is that the pancreas has an internal secretion, poured into the blood, and probably of the nature of a ferment, which serves to convert free sugar into glycogen.

Morbid changes have been frequently observed at autopsies in cases of diabetes, according to some writers in as many as 50 per cent. of cases. On the other hand morbid changes of a very marked character, such as cancer, cirrhosis, obstruction of the ducts or acute pancreatitis may all occur without diabetes. These apparently conflicting statements have been harmonized by Opie's observations.

This observer points out that the gland is made up of two distinct portions. In addition to the ordinary glandular substance, whose secretion is poured into the bowel, there are small islets of tissue, not communicating with the duct, but surrounded by a rich vascular network, and known by the name of their discoverer as the Islets of Langerhans. These islets may escape injury even in extensive lesions of the pancreas, and in such cases there is no diabetes. When, however, they undergo degenerative changes diabetes results. This discovery affords a rational explanation of the presence or absence of diabetes in pancreatic disease, and dissipates the apparent discrepancy which has hitherto existed. It is a fair inference that the internal secretion of the glands as furnished by the cells of Langerhan's islands.

Another very interesting development in connection with pancreatic diabetes has been established by Herter and Richards. It has been shown by several observers that the subcutaneous injection of the active principles of the suprarenal glands capsules is followed by glycosuria. Herter found that the intraperitoneal application of adrenalin was followed by larger amounts of sugar in the urine than when administered in other ways. He further showed that adrenalin pencilled on the surface of the pancreas produced glycosuria, whilst similar applications to the liver or kidney were negative. Similar experiments carried on with reducing agents, such as carbonic oxide or sulphurous acid, were also shown to produce glycosuria when applied directly to the surface of the pancreas. As adrenalin is a reducing agent, the production of sugar would appear to follow the action of any reducing agent applied directly to the gland.

F. G. Finley.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Reduction of Shoulder Dislocations without an Anæsthetic.

ROLOFF. "Ueber Manuelle Reposition von Luxationen ohne Narkose." *Centralb. f. Chirurgie, April 10, 1902.*

After drawing attention to the investigations of Stimson and Hofmeister, Roloff remarks that painless reduction of dislocations without the use of an anæsthetic would be a great step in advance of the older methods. He reports eight cases of subcoracoid dislocation reduced without pain and without anæsthesia by simple gentle extension and manipulation. The same result was obtained in one case of subspinous dislocation.

The patient is placed upon his back on the floor. The hand of the dislocated arm is grasped and slowly extended. The force is very gradually increased, but always gently and never to the extent of causing pain. At the same time the arm is gradually abducted until it is nearly vertical, the long axis of the arm and of the body becoming nearly parallel. This motion is carried out so gently and quietly that the patient feels little or no pain. The head of the humerus is now opposite the glenoid fossa. The head is now supported, while the arm is slowly brought back to the side and the reduction is complete. If the surgeon has no skilled assistant the extension can be carried out by a layman, while he (the surgeon) gives his attention to the support of the head. The patient ceases to complain of pain as soon as gentle extension is begun. It is important that the manipulations be continuous and that no false motions be made, and that useless manipulations be avoided. By engaging the patient in conversation the muscle relaxation is greater. The time occupied was from three to thirteen minutes.

In three other cases the method failed. In two it was thought that the manipulations were not carried out with sufficient patience and care. In the third forcible reduction without anæsthesia had previously failed.

The same method was successfully adopted in two cases of backward dislocation of the forearm. Slowly and gently the arm was extended until a condition of hyperextension was obtained, and then the forearm was slowly flexed at the same time the olecranon being pushed forward.

Reduction was accomplished in one case in three and in one in ten minutes.

Diversion of the Blood from the Portal Vein into the Vena Cava.

TANSINI. "Ableitung des Portalen Blutes durch die direkte Verbindung der V. portæ mit der V. cava; Neues operatives Verfahren." *Ibid, Sept. 6, 1902.*

The success which has followed upon the adoption of the suggestion of Talma of Utrecht to produce an anastomosis between the portal and systemic veins for the relief of ascites due to cirrhosis of the liver, has been considerable. According to Elliott about 50 per cent. of the reported cases have been relieved. The technique is to open the abdomen and by friction over the liver, spleen, omentum and parietal peritoneum to cause an adhesive inflammation to ensue. Morrison has shown by an autopsy on a patient dying two years after operation, that there are formed in the omental adhesions new vessels which may reach the size of the normal radial arteries.

Tansini now proposes to divert the portal blood directly into the vena cava. The experiment has been made in his laboratory. Ten dogs have been operated upon and in seven instances the experiment was successful. He performs a termino-lateral anastomosis in the following way:—The portal vein and a portion of the vena cava are isolated. The blood stream is temporarily arrested by one rubber band around the portal vein and two around the vena cava. The portal vein is then tied at the hilus of the liver and cut across. A slit is then made in the vena cava, or still better a spindle-shaped piece removed from the wall. The divided end of the portal vein is then united to the edges of the opening in the vena cava by silk sutures and the temporary ligatures removed. The dogs were fed well with meat and bones, and remained well and in good condition until killed. One of them was allowed to live two and one-half months after operation and was then in the best of health.

Ophthalmology.

UNDER THE CHARGE OF FRANK BULLER

Eye Symptoms in Extra-ocular Disease.

G. F. SUKER. "Chlorosis and its relation to the Eye." *Medicine, May, 1902.*

W. R. GOWERS. "Myasthenia and Ophthalmoplegia." *B. M. Journal, May 24, 1902.*

H. DOUGLAS SINGER. "Influence of Age upon the incidence of Optic Neuritis in cases of Intracranial Tumours." *Lancet, June 14, 1902.*

GUILBERT. "Unilateral Exophthalmos in Basedow's Disease." *La Clinique Ophthalmologique, May 10, 1902.*

TROUSSEAU. "Unilateral Exophthalmos in Basedow's Disease." *Ibid, April 10, 1902.*

BAGNERIS. "Paralysis of Accommodation following Mumps." *Ibid, June 10, 1902.*

JACQUEAU. "Amblyopias of Hepatic Origin." *Ibid, June 10, 1902.*

Dr. Suker's conclusions are as follow:—That chlorosis does cause optic atrophy, papillo-retinitis and foci of fatty degeneration closely resembling albuminuric retinitis. Double optic atrophy in chlorosis may closely simulate brain tumour. Headaches due to refraction errors and asthenopia are greatly exaggerated by chlorosis. Arterial and venous pulse in the retinal vessels are indicative of the severity of the disease. The fundus lesions are due to an autotoxæmia. The prognosis is favourable except when optic atrophy has supervened.

Gowers' cases of myasthenia all showed weakness of limbs, moderate fatigue of muscles supplying the bulb, ptosis and weakness of the remaining ocular muscles and of many supplied by the seventh nerve, especially the zygomatic muscles. These symptoms remained unaltered.

From an analysis of eighty-eight cases of intracranial tumours, Singer arrives at the conclusion that the presence of optic neuritis in intracranial tumours, excluding those occurring in the pons, is rare in patients under forty years of age, but rapidly increases in frequency after that age. This result may be found to have an important bearing on the mode of origin of optic neuritis, in that it would appear *prima facie*, to be in some way dependent for its existence upon the healthy condition of the vessel walls.

Guilbert's case of Basedow's disease exhibited well marked symptoms

in the left eye, with moderate goitre, but no tachycardia. Trosseau reports three cass all typical, but with monocular symptoms.

Bagneris describes a rather interesting sequela of mumps, in the condition of paralysis of accommodation occurring in a fifteen year old child three weeks after the mumps and lasting only a short time.

Jacqueau considers the visual complications of hepatic origin to be twofold; the first being hemeralopia, and the second and rarer type being amblyopia with or without central scotoma. The symptoms are the result of the toxic action of the retained products. He advocates the exhibition of sheep liver which Trantas has found to be successful in hemeralopia.

Ocular Therapeutics.

HASKET DERBY. "Optic Atrophy and its treatment by the Subcutaneous Injection of Strychnine." *Boston M. and S. Journal, May, 15, 1902.*

EDWARD JACKSON. "Trikresol as an Antiseptic in Ophthalmic Practice." *Ophthalmic Review, June, 1902.*

F. R. VON ARLT. "The Use of Citrate of Copper in Trachoma." *Central f. prakt. Augenheil, May, 1902.*

KOSTER. "Injection of Sterilized Air into the Anterior Chamber for Tuberculosis of the Iris and Cornea." *Klin. Monatts. f. Augenheil, April, 1902.*

H. SCHMIDT. "Panophthalmitis cured by the introduction of Iodoform into the Eye." *Zeitsch. f. Augenheil, April, 1902.*

HAAB. "Action of Iodoform inside the Eyeball." *Corr. Blatt. f. Schweizer Aerzt., 1902, No. 8.*

A. H. BENSON. "Note on the value of Fluorescin Test." *Ophthal. Review, 1902.*

THEOBALD. "Carbolic Acid as a substitute for the Cautery in the Treatment of Corneal Ulcers." *Amer. Jour. Med. Sciences, June, 1902.*

Hasket Derby, in urging the use of strychnine in cases of optic atrophy, does not overlook the gloomy prognosis of this disease, but considers that the slightest chance of relief should be seized upon and used to its utmost limit. The strychnine is always injected in the temple, beginning with .04 gramme and increasing by .01 gramme daily, or until constitutional effects appear, which do so generally by the tenth dose. An interval of ten days is then allowed to elapse and the treatment repeated, and sometimes a third course is given. In certain cases of advancing atrophy the injections seem to stay the course of the disease, but whether permanently remains to be seen.

Dr. Jackson lauds trikresol in a solution of 1 to 1,000 as an ideal antiseptic for ophthalmic practice. It is used as a lotion, as a basis for cocaine solutions, etc., but not for homatropine or atropine where repeated frequent instillations are required and the slight smarting caused by the trikresol would be objectionable. It is also an admirable bath for instruments after they have been sterilized.

Von Arlt uses citrate of copper in ointment from 5 to 10 per cent. in strength in cases of trachoma. It is applied two or three times daily. Corneal ulcers and the exhibition of iodide of potash forbid its use.

Koster's results in tuberculosis of the iris and cornea seem almost too good. He withdraws a little aqueous from the anterior chamber and then injects sterilized air. Improvement rapidly sets in and continues. The injections were repeated from four to five times in the three cases cited.

Schmidt's case of panophthalmitis followed cataract extraction. Schmidt reopened the anterior chamber, evacuated the pus, and inserted an iodoform disc. Improvement was rapid and in a month the patient had one-fourth full vision with a convex lens of 10 D.

Haab reports the disappearance of iris tubercles after introducing sterilized iodoform into the anterior chamber of the eye. This result, however, lasted only until the iodoform was absorbed, when a fresh crop of tubercles appeared. Iodoform introduced into the vitreous also acted well in threatening or active traumatic inflammations.

Benson's observation on fluorescin add but little new to our knowledge of the action of the drug. He brings out the point, that not infrequently fluorescin does not stain the cornea unless cocaine has been previously instilled, which is due to the softening action of the cocaine on the corneal epithelium. It is doubtful if it stains the endothelium. It does not stain the œdematous cornea of glaucoma. The damaged ocular and palpebral conjunctivæ stain yellow. Fluorescin stains only where there is an abrasion of the cornea or where the epithelium is diseased or dead. Normal corneal epithelium on which much cocaine has been dropped will stain a mottled green, due to the softening action of the cocaine and its diminished vitality.

Theobald considers the application of pure carbolic acid to infiltrated corneal ulcers as safe and even more efficacious than the cautery. The ulcer, after instilling cocaine, is scraped clear of sloughs, etc., and then the carbolic is very carefully applied on the end of a small toothpick, after which in a few moments the eye is flushed with boric lotion and the lids allowed to close.

J. W. Stirling.

Pathology.

UNDER THE CHARGE OF J. GEORGE ADAMI.

On Bacterial Entrance and Exit.

FORD, W. W. "The Bacteriology of Healthy Organs." *Transactions of the Assoc. of American Physicians, XV., 1900, p. 389.*

BULLARD, MARGUERITE, J. "A study of the Bacterial Flora of the Intestinal Mucosa of the Normal Rabbit." *American Medicine, IV., 1902, p. 546, (Oct. 4.)*

CARMICHAEL, E. SCOTT. "The Effect of Injection of Micro-organisms into the Portal System on the Sterility of the Bile in the Gall-Bladder." *Journal of Pathology and Bacteriology, XIII., No. 3, 1902, p. 276.*

It is very human nature for investigators, working along one particular line and convinced of the correctness of their own observations, so far as they go, to fail to see the direction in which those observations are incomplete, and for those investigators to give the lie direct to the conclusions of previous observers, who, employing other and, it may be, but slightly different methods of observation, have reached divergent results. In the days when scientific studies in medicine were young, and the conditions of investigation were imperfectly understood, this was perhaps pardonable; now-a-days it is so no longer. Before giving the lie direct to any series of observations, it is essential that those observations be carefully repeated according to the directions given by the original observer, or, at least, if not repeated, that the conditions of experimentation be such as to be more accurate and more complete than those of any previous worker on the subject. It is the duty, that is to say, of anyone repeating investigations of a given order, to determine, whether, under like conditions of experimentation, results would not have been obtained confirmatory of that earlier work, or, at least, to show wherein that earlier work was incomplete; it is his duty where contradictory results have been obtained to indicate, where possible, the reasons.

If this is not done, the inevitable result is confusion. The ordinary student, who merely, it may be, follows a brief abstract of the results gained by different observers, concludes that these results are absolutely contradictory, and he is apt, if he comes to any conclusion

at all, to reach that conclusion either by accepting the verdict of the majority of the observers or of those among them whom he regards as the more authoritative. He does not realize that minute variations in procedure may lead to great variations in the results obtained.

I have selected two articles here reviewed in order to call attention to this unscientific mode of study of moot questions.

For long years, there has been debate concerning the presence of bacteria in the healthy body and the discharge of bacteria in the secretions. The largely received opinion has been that, in the first place, bacteria do not enter the healthy tissues or, at least, that these healthy tissues are sterile and that, if there be entry of bacteria through any portal, they are not discharged through the kidneys or liver unless there be definite lesions in those organs. Time and again, however, observations have been published, showing that these views are incorrect, only to be contradicted by other series of observations tending to re-establish the prevalent opinions.

Thus, notably in our laboratory here in McGill, Ford has shown, in contradistinction to the work of the majority of previous observers, that studying the organs of a long series of apparently healthy rabbits, guinea pigs, cats and dogs, by the employment of proper methods he was able to gain cultures from close upon 80 per cent. (80.6 per cent.) of the organs (livers and kidneys) employed by him. He pointed out, that, for this purpose, relatively large quantities of material had to be used—the whole kidney, for example—that the growths, in general, only showed themselves very slowly, indicating both that the bacteria were not present in large numbers and that apparently, they had already become attenuated and inhibited in proliferative capacity; he showed that the development of different species of bacteria in carnivorous and herbivorous species of animals, the presence of the same forms of bacteria in both kidneys and livers of individual animals and, thirdly, certain differences in the bacteriology of individual animals, all indicated clearly that the results could not be due to contamination, but must be due to the actual presence of the bacteria within the tissues at the time of killing of the individual animals. But now Miss M. Bullard would throw some doubt upon Ford's work and in all probability she will be quoted among those who have found the organs of normal healthy animals to be in general sterile.

Let us, however, study her work. She started out to determine whether a particular bacterial flora exists in the mucosa of the digestive tract of normal rabbits, and whether, in case there is such a flora, there be any relationship between it and the bacteria occasionally found in solid organs. As regards her actual experiments they would seem to

have been most carefully performed. She made cultures from the mucosa of the œsophagus, stomach, duodenum, jejunum, ileum, appendix, cæcum, upper colon, lower colon and rectum. She opened these with sterilized instruments immediately after death, washed the surface of the mucosa with boiled water so as to remove organisms which might be purely due to the overlying fæces, and then scraped some of the mucosa from a small area with a sterile scalpel and transferred some of this material to each tube of the media used, employing gelatine, glucose agar and glucose broth. At the same time, she inoculated other tubes with heart blood, others again with pieces of spleen, liver and kidney, each from 0.5 to 1 cm. in diameter. She examined in this way seven rabbits and the results obtained were quite interesting. Certain forms like the Hay Bacillus, M. desidens and Sarcina alba were found in the intestinal wall of almost every animal. The mucosa of the stomach contained the smallest number of bacteria; the plates made from the cæcum and appendix and frequently the rectum contained a larger number of colonies than did those from any of the other divisions of the digestive tract. These latter observations agree fully with those obtained by Cushing in man. The mucosa of the œsophagus contained more bacteria than did those portions of the digestive tract immediately following after the stomach. But now, contrary to the results obtained by Ford, bacteria were found in the glandular organs of but two rabbits out of the seven. The organisms were identical with the species isolated from the digestive tract of the same rabbits. The cultures made from the heart blood were negative in all cases.

It will be seen that in regard to these later observations Miss Bullard does not deny that bacilli are obtainable from the organs of apparently healthy animals, she only discovers that they are present much more rarely than Ford has stated.

But let us look a little more fully into Miss Bullard's methods of procedure.

In the first place, though this, I confess, is a matter of rather minor importance, she employed only small portions of the organs. Ford laid stress on the fact that the indications were that not many living bacteria were present in a given healthy organ at a given moment and so for his investigations employed much larger portions of tissue—the whole kidney, for example. It may, however, be urged with some justice, that even a quarter of a cubic cm. of liver or kidney material should be sufficient to give positive results. A matter of more importance is that her animals were in a state of partial starvation, having been kept without food for "at least seven hours" before being

killed. This fact introduces a totally new element which should certainly have been noticed by Miss Bullard in her remarks in regard to the divergence between her results and those of Ford. Ford's conclusions were that the bacilli are constantly passing (by the agency of leucocytes) from the lumen of the intestine into the blood and lymph streams and that, under normal conditions, these bacteria are as constantly being destroyed by the endothelium and cells of the different organs, etc. Now, clearly, when digestion is active, and when there is determination of blood to the intestines then there is an increased passage out of leucocytes; this increased passage has been noted by many observers occurring while digestion is in full swing. These conditions, therefore, favour the entrance of bacteria into the tissues. When, on the contrary, the digestive act is largely at a standstill, then we should expect a reduced entry of bacteria and should expect exactly what Miss Bullard finds, namely, that the internal organs become, in the majority of cases, quite sterile.

As I have pointed out elsewhere, following a suggestion of Dr. G. E. Armstrong, empirically the surgeon acts upon this principle by dieting the patient for a day or two prior to the operation, by flushing out the intestines with purgatives and by taking care not to operate soon after a meal has been given to the patient.

Miss Bullard, that is, by employing fasting animals, has introduced another factor. Her results do not contradict those of Ford; rather, they amplify them and indicate that, in the fasting animal, the entrance of bacteria into the healthy organs is materially reduced.

Long years ago, in 1882, Cohnheim suggested that in the event of general bacterial infection, the body protects itself by excreting the living germs through the kidney and liver. But very considerable doubt was thrown upon this theory by many observers, notably by Wyssokowitsch and Sherrington. The former, in a long series of observations, carried on with twelve species of bacteria which he chose because they do not ordinarily cause local lesions in the kidney, was unable, in a single instance, to gain cultures of the bacilli from the urine, whereas, in thirteen out of seventeen experiments, with species known to be liable to cause such local lesions, he found that the bacilli passed, in smaller or larger numbers, into the urine. Sherrington, in the course of a very full study, found that even when every drop of the inoculated blood was teeming with micro-organisms, there might not be the smallest transit of these into the urine or bile. Though with certain species of pathogenetic organisms, after a time, they might be found, he concluded, with the former observer, that when this occurred, the evidence was against regarding the tissues as

still normal. He noted that, occasionally, bacteria might be present in the secretions when there was no detectable presence of the same in the blood. Notwithstanding, other observers have obtained diametrically opposite results. Cotton, for example, found the pyococcus aureus and the B. prodigiosus in the bile thirty minutes after inoculation; Pernice and Scagliosi after hypodermic injection of anthrax bacilli in the guinea-pig, found them in the bile in four hours; Posner and Lewin after injecting the bacillus prodigiosus into the intestines, obtained it from both the kidney substance and the urine within twenty-four hours. Biedel and Kraus found the pyococcus, the B. coli and the B. anthracis in the urine a few minutes after intravenous injection and, similarly, found the pyococcus in the bile in thirteen, in twenty and in other cases in thirty-five minutes after inoculation. Their method was employed and extended by Fütterer of Chicago, who, employing the same organisms, obtained abundant cultures from the bile within two or three minutes after inoculation into the left side of the heart. Our own observations, here in McGill*, have tended strongly to confirm these observations and to show that forms like the colon bacilli are actively taken up by the endothelial cells of the liver capillaries, are next to be recognized within the liver cells and are frequently to be obtained in a diplococcoid, and apparently attenuated form, in the bile.

This matter, concerning the passage of the bacilli into the bile, is of some little importance as helping to explain the part played by bacilli in cholelithiasis and cholecystitis. The generally accepted opinion has been that the bacilli setting up this condition, have either ascended the common bile duct from the duodenum or have reached the gall-bladder through the lymphatics. But if pathogenic bacilli can be excreted through the liver, then a much more rational etiology is indicated; rational, because, when the duodenum so frequently contains members of the colon group, and other micro-organisms which are potentially pathogenic, and when the upper part of the small intestine shows no evidences of typhoidal lesions, it is, to say the least, curious that in the cholecystitis and cholelithiasis following typhoid, we so often gain pure cultures of the typhoid baccilus from the gall-bladder or from gall stones. We should expect to find, in general, a mixed infection. On the other hand, if there be a generally infected condition of the body through the agency of the typhoid bacilli and if these become discharged through the liver, their condition in a pure or practically pure condition in the bile is easy to understand.

* Adami, Abbott and Nicholson, On the Diplococcoid form of the Colon Bacillus. *Jour of Expt. Medicine*, IV., 1899, p. 349, etc.

Mr. Scott Carmichael, however, concludes from his observations that Sherrington's theory is correct and lays down that "there are thus only two methods of infection of the gall-bladder; either by direct extension from the intestinal tract disease, or, by infection through the general blood stream to the cystic artery, and the observations by Sherrington tend to disprove the latter view." His observations were conducted upon eight animals, five rabbits, two guinea-pigs and one dog. He injected the colon or typhoid bacilli or streptococcus pyogenes into either the superior mesenteric or splenic vein, or in three animals direct into the gall-bladder. In the latter case, even three weeks after the injection, he was able to gain pure cultures from the bile. In the other cases, when the experiment was successful, he found the bile sterile.

But let us examine a little into his methods.

In his first experiment he employed a twenty-four hours growth of typhoid bacilli (which are not pathogenic organisms in the rabbit), and injected five minims into the superior mesenteric vein. The animal was killed four days afterwards and the bile found sterile.

The conditions here, it will be seen, by no means afford a fair test. In the first place, the amount inoculated was, under the circumstances, singularly small. Considering that he was dealing with a non-pathogenic organism, we should expect that the individual bacilli would be rapidly destroyed by the body fluids and endothelium of the liver capillaries, and, if our theory be correct, (a point which Carmichæl should have taken into consideration), if the process of excretion be a cellular one, then these results are only to be expected. In the next place, the observations of Biedel and Kraus and of Fütterer indicate that the active passage is almost immediate. These observers did not examine the bile in the gall-bladder, but first placed the cannula in the common bile duct, and after this made the intravenous injection of the bacteria and found, as already reported, that within a few minutes these organisms were to be detected in the bile passing out of the duct.

Carmichæl's cultures were only made from the gall-bladder four days later. He did not in the least, take into consideration the possibilities that, either if the bacilli passed into the gall-bladder, being only of low virulence for the rabbit they might undergo destruction through the (weak but still existent) bactericidal properties of the bile, or that, injecting such small quantities, they might be discharged by the common bile duct before ever entering the gall-bladder.

The same criticisms are to be applied to greater or less extent, to

all his further experiments. He obtained certain definite results by employing certain procedures; he does not adequately take into consideration the alterations that might be brought about by employing other methods and, from his own very limited experiments, he ventures upon a wide generalization. It might be added that the paper gives evidence of a poor technique, for, three out of his eight animals died of peritonitis and so gave imperfect results; while, when he employed streptococci, he made cultures upon solid media instead of upon broth in which streptococci are very much more apt to reveal their existence, if present. In fact, throughout his paper, he leaves wholly out of account the fact that for observations of this nature, fluid cultures are preferable. As we have pointed out on more than one occasion, and as has recently been emphasized by Hildebrandt in his observations upon the presence of bacteria in the healthy lung, it is a mistake to use solid media in experiments of this nature, inasmuch as the inhibitory action of the body fluids tends to prevent the growth of bacteria which may be present in those fluids; undiluted blood and body fluids smeared on a solid surface arrest growth. The correct procedure is to inoculate the bile, blood, etc., into relatively large quantities of fluid, thereby so diluting any bactericidal substance which may be present as to minimise its inhibitory action. Obviously, observations of this order in which all the factors are not properly taken into consideration are to be deprecated. They are not merely valueless, but positively harmful.

J. G. Adami.

Reviews and Notices of Books.

A Text-Book on the Science and Art of Obstetrics. By Henry J. Garrigues, A.M., M.D., 884 pages, 504 illustrations. J. B. Lippincott Company, Philadelphia. Canadian Agent, Charles Roberts, 1524 Ontario street, Montreal.

Few writers of recent obstetric books have brought to their task a better equipment than the author of this most interesting contribution to obstetric literature.

An author and teacher of the subject for more than twenty-five years, a vast experience in both hospital and private practice, a close student and the writer of one of the most popular text-books on gynæcology, Professor Garrigues' name on the title page is sufficient to lead to high expectations on the part of the medical reader.

In his modest preface the author states that his aim has been to write a text-book and not a book of reference, and thus in a degree apologizes for the magiesterial tone used in the text.

The general management of the subject is excellent, the aim being to lead the student from the simple to the complicated. The subject is divided into two general divisions—normal and abnormal. In the first division he considers after a short general foundation, normal pregnancy, normal labour and normal puerpery. In the second division are discussed abnormal pregnancy, dystocia, obstetric operations and abnormal puerpery, while the book concludes with an excellent section: "Notes on the Diseases of New Born Children." The division into chapters is overdone, there being no less than 120.

Chapter V is very unfortunate and its matter in bad taste in a text-book for students. In future editions it should be rewritten or, better, expurgated. The chapter on the placenta is too brief and is scarcely satisfactory. The chapters dealing with the mechanism of labour, the conduct of labour, faulty presentations, deformed pelves, symphysiotomy and Cæsarean section are specially worthy of mention. The author writes a strong indictment against the employment of midwives in any civilized community. His objections are well taken and forcibly advanced. As an example of his opinion on this subject the following may be quoted :—"The institution of midwives is a remnant of barbaric times, a blot on civilization which ought to be wiped out as soon as

possible. As America has led the world in establishing colleges for educating women physicians, let it also form the vanguard in a war of extermination against these pestiferous remnants of pre-antiseptic days, midwives and schools of midwifery."

We note with objection his recommendation of chlorinate of lime for hand disinfection, also the introduction of the finger into the rectum to facilitate the delivery of the head, and the use of *serres fines* for the repair of perineal lacerations. He points out the dangers and strongly objects to the employment of medullary cocainization as an anæsthetic in labour.

The author prefers the Harris method for symphysiotomy, but considers that the operation should only be entrusted to an operative gynæcologist or a general surgeon with obstetric experience.

The general style of the book is simple, clear and almost conversational. The author enters with great detail in all practical points and manifests throughout his personal observation and research. The book is easy to read and is most instructive, while being at the same time thoroughly scientific and eminently practical. It will undoubtedly be a very popular book with the general practitioner as well as with the medical student. The illustrations, most of them original, are well chosen, while the book is not padded with them as is too often the case. The publishers' work in letter press and binding is all that could be desired.

D. J. E.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, May 16, 1902.

G. E. ARMSTRONG, M.D., PRESIDENT, IN THE CHAIR.

Uterine Polypus.

DR. F. A. LOCKHART showed a specimen of a uterine polypus of which he gave the history in detail. The growth, which occurred in a woman aged 44 years, protruded from the vagina and on examination was seen to be attached to the fundus of the uterus. The interesting point about the case was the absence of hæmorrhage. As the woman was past the menopause the whole organ was removed.

Friedreich's Ataxia.

DR. JAMES STEWART showed a boy aged 15 years, with the cerebellar type of Friedreich's ataxia. The first symptom had appeared hardly more than a year before in the form of ataxia, which had steadily increased in degree, so that the boy was hardly able to walk without assistance. Both feet were deformed and the spine showed anterior and lateral curvature. Exaggeration of the knee jerks was one of the points distinguishing this case from the spinal type of the disease in which they were lost. Besides these symptoms the boy showed some disturbance of speech, paralysis of the external rectus and nystagmus. The interest of the case lay in its rarity, the only spinal symptoms being the kyphosis and scoliosis. There was no history of similar disease in the boy's family so far as could be determined.

DR MILLS showed some animals in which removal of various portions of the cerebellum had resulted in very marked inco-ordination, and discussed the function of the cerebellum as having a controlling influence on the cerebrum.

DR. SHIRRES discussed the points brough out by Dr. Mills.

Myasthenia Gravis.

DR. F. G. FINLEY showed a case of this disease, a full report of which appeared in the July number, page 498.

DR. JAMES STEWART had had a case under observation for two years, in which time three different attacks had occurred, and finally the disease seemed to be permanently arrested. The disease was very

closely allied to pronounced neurasthenia, from which it was merely a difference in degree.

The Use of Hyoscine before the Administration of Ether.

Dr. E. A. Robertson contributed this paper, published in the June number.

Dr. G. G. Campbell referred to a number of drugs which had been tried with the hope of eliminating some of the unpleasant effects of ether administration, but without any success. The wonderful results obtained with hyoscine warranted a prolonged trial.

Pulmonary Œdema.

Dr. H. B. Cushing read a paper on this subject, which was discussed by Drs. Morrow, Lafleur, Hamilton, Adami and Mills.

Stated Meeting, June 6, 1902.

G. E. Armstrong, M.D., President, in the Chair.

Enterolith.

Dr. J. Alex. Hutchison showed an enterolith having a biliary calculus as a nucleus, and read a report of the case which will be published next month.

Dr. Finley remarked on the long period of eight years which had elapsed between the biliary colic and the symptoms of intestinal obstruction, and made the suggestion that it had lain in the colon; it was difficult to see how a large stone could have passed down the small intestine without causing pain.

Dr. Armstrong looked on the suggestion that the stone had got into the colon as a very practical one. He referred to cases which he had seen, in which the gall-bladder had perforated into the colon.

Angioneurotic Œdema.

Dr. W. E. Deeks reported this case. (See July, pp. 507.)

Dr. W. F. Hamilton referred to a case of recurrent localized œdema without any apparent cause. The attacks were diminishing in frequency and severity. The relationship supposed by some to exist between asthma and angioneurotic œdema was alluded to.

Dr. Birkett related a somewhat similar case in which after severe exertion a patient, the subject of cardiac disease, had developed severe œdema of the nasal passages and trachea, the larynx escaping involvement. There was dyspnœa and cyanosis, but a hypodermic of morphine quickly relieved the condition.

Probable Hæmorrhage into the Cord followed by Symptoms of Brown-Sequard's Paralysis.

DR. SHIRRES reported this case, which was discussed by Drs. Laurin, Hamilton, Mills, Deeks and Finley.

Stated Meeting, June 27, 1902.

G. E. ARMSTRONG, M.D., PRESIDENT, IN THE CHAIR.

Inflammatory Anastomosis between Gall-Bladder and Duodenum.

DR. MACTAGGART showed this specimen from a case of Dr. Armstrong's, showing anastomosis between the gall-bladder and the duodenum. At the autopsy the gall-bladder was found adherent to the duodenum, and on slitting open the duodenum a perforation of about one cm. in diameter was found. The gall-duct was pervious. Only a partial autopsy was allowed.

DR. ARMSTRONG said that the stone removed was as large as one-half of an average-sized banana, the circumferences being 6½ and 3½ inches. The patient was a woman of 72, giving a history of several attacks of colic recovered from in about 24 hours. The present attack began with pain, followed the second and third day by vomiting of stinking matter. The following day, when first seen by the speaker, there was considerable abdominal distension pointing to intestinal obstruction, and operation was allowed about twelve hours later. On opening the abdominal cavity, gas and fæcal matter escaped, and the large gall-stone was found lying in the intestine about a foot away from the distended coils. The perforation was found about four feet above where the stone was lying, and through this the fæcal matter had escaped. A possible explanation was that the stone had lain at the point of ulceration which it caused and by some means had later moved down.

DR. ELDER thought from the size of the stone that it was possible it was an enterolith having a gall-stone nucleus. He considered it quite impossible that one of such a size could have found its way through from the gall-bladder.

DR. ARMSTRONG, in reply, said he had removed a stone nearly as large as this one from the gall-bladder itself. The presence of four facets on the stone pointed to its being a gall-stone, as it must have lain against four smaller stones.

Two Cases of Sporadic Typhus Fever.

DR. LAFLEUR reported these two cases, residents of Montreal, husband

and wife which had been admitted to the Montreal General Hospital. After reporting the history of the first case, Dr. Gordon Campbell gave the history of the second who had been under his care during Dr. Lafleur's absence from the city.

DR. KENNETH CAMERON had sent these patients into hospital and described their condition previous to admission.

Addison's Disease with Recovery.

DR. DEEKS reported a case of Addison's disease in which the symptoms had all disappeared on the patient taking suprarenal capsule. (See June number, p. 509).

DR. JAMES STEWART congratulated the reader of the report on having effected a cure. He referred to a case reported by Dr. Blackader some years previously in which suprarenal had proved beneficial, but he did not know the after history. He spoke of the difficulty of making a diagnosis of Addison's disease in acute cases, and asked Dr. Deeks if the mucous membranes had been pigmented.

DR. LAFLEUR thought it might be of interest if this patient had been tested with tuberculin. He referred to a case showing all the symptoms of this disease in which tuberculin had given a positive result.

DR. DEEKS said, in reply, that he thought he had made it quite clear in his report that pigmentation was present in both mucous membranes inside the cheeks and on the lips, and it was very characteristic. While the patient had not been tested with tuberculin, she gave an exceedingly strong history of family tuberculosis.

Resume of Recent Advances in Infant Feeding.

DR. A. D. BLACKADER read this paper, published in the June number of this Journal, page 491.

DR. EVANS noted three points, *viz.*, the reacknowledgment of the action of starch as a diluent favouring the digestion of proteids, the new whey mixtures, and the reaction against sterilization and pasteurization. The speaker had not had much satisfaction with starch as a diluent. Maltose, he thought, tended to produce looseness of the bowels and mucous or watery stools. Beef juice also in many cases seemed materially to disturb the digestive process.

DR. ANDERSON approved of the use of cereo-gruels as tending to soften the curd of cow's milk and changing the food upon which the bacteria flourish in milk fed children. He approved of the addition of cream to the gruels as likely to help in keeping the bowels regular.

DR. CHURCH also was in favour of the cereo-gruels, especially in cases

of constipation. He asked if the reader were opposed to the use of the ordinary food preparations.

Dr. Shaw would like to know whether the dextrine, lactose or cane sugar made any difference in the amount of nitrogen eliminated. He had been using cane sugar instead of milk sugar and had found very little difference in the results obtained.

Dr. Bazin spoke of the difficulty of feeding children with any form of milk, modified or otherwise, where there was a careless mother or nurse in charge. Under such circumstances he thought it was much easier to trust the person in charge of the child to do the mixing of a certain amount of powder and water, than to keeping the milk fit for use.

Dr. Blackader, in reply, in using the term cereo-gruel, had not referred to dextrinized gruels which might act as an irritant, and did not have the same effect in separating the curd of milk. In diarrhœa, the first and most important thing was to stop all milk for 24 hours or longer and to substitute a gruel. He did not incline to the theory that lactic acid inhibited the growth of all bacteria, though it might inhibit some of the more noxious forms. Where one could not have milk uncontaminated, it was certainly better to resort to condensed milk or some of the infant foods. He thought that the starch in very thin gruels might be digested as early as the sixth month, but not before that. He did not think we should go to extremes, every child's stomach should be tested and the food modified to suit the individual case, the test being that the child was comfortable and gaining in weight.

Sir William Hingston thought that the question of beef juice not being essential to life had been settled thirty years ago. He spoke strongly against the prevailing custom, at least among the well-to-do, of too early weaning of the child.

Stated Meeting, October 3, 1902.

H. S. Birkett, M.D., Vice-President, in the Chair.

Recto-Vaginal Fistula due to Cancer of the Uterus.

Dr. J. G. Adami showed this specimen, remarking that it was now rare to come across so well marked an example, as most cases came under care of the gynæcologists before reaching this stage. The patient was a woman of 50 or upwards, passing fæces per vaginam and with profuse diarrhœa. She did not complain of pain. At autopsy there was found a squamous cancer of the cervix uteri involving the

whole organ. Ulceration had destroyed all the tissues in the neighbourhood and led to a large fistula communicating with the anterior wall of the rectum. The pelvic viscera were all matted together and the disease involved the Fallopian tubes. The case also showed congenital smallness of the left kidney, and a considerable amount of chylous ascites and left chylothorax, the nature of which has been determined by ether and the Sudan red stain. The cause of this had been found on dissection to be obstruction of the thoracic duct at the level of the fourth dorsal vertebra, by a mass of cancerous lymphatic tissue. The duct below this was almost the size of a lead pencil.

Dr. Lapthorn Smith agreed that cases of this kind were now rare because, although perhaps coming too late for cure, they were recognized and the local condition treated. The explanation of the cause of the chylous ascites was most interesting, as the frequent presence of ascites along with malignant disease of the pelvic viscera had been to him difficult of explanation. Probably many more would be found due to this cause were it sought for. The importance of recognizing these cases early was dwelt on.

Dr. Peters referred to an interesting case of entero-vaginal fistula which had come under his notice in connection with cancer of the uterus. A portion of the small bowel had come down and ulcerated through into the vagina.

Dr. Gurd asked whether this chylous fluid was easily recognized. He had a patient whom he suspected of having malignant disease, and whom he had tapped five times and the fluid withdrawn was gradually becoming darker and somewhat opaque.

Dr. Adami, in reply, said that the whole subject of ascites was a very complicated one at present. On the one hand there was the true chylous ascites, a milky fluid giving evidence of the presence of fat due to escape of chylous lymph into the peritoneal sac. In other cases there was a distinctly opalescent and moderately milky fluid (pseudo-chylous ascites) diffusing out through the walls, probably from some obstruction of the peritoneal lymphatics, through the presence of cancer of the retroperitoneal glands. With regard to Dr. Smith's remarks, it must be remembered that chylous ascites alone can be brought about by blockage of the thoracic duct.

Nephritis in Congenital Unilateral Absence of Kidney.

Dr. F. G. Finley reported this case, of which the following is a summary:

The patient, aged 36 or 37, suffered for three years from Bright's

disease, but for the past six months, pain in the back and weakness forced him to give up work. On admission to the Montreal General Hospital he was found to have an advanced stage of the disease, together with a left pleurisy and soon developed uræmic symptoms. The urine was of low specific gravity and moderate quantity, showing a small amount of albumin and very few casts. There was no dropsy. Interstitial nephritis was diagnosed. At the autopsy the pleurisy was found to be tuberculous in origin, illustrating the fact that most cases of pleurisy associated with Bright's disease are tuberculous. One kidney was absent, a condition said by Morris to occur once in 2,600 cases. The hospital statistics showed three instances in 2,000 cases.

DR. MCCRAE added to the report some notes of the autopsy. Death had been from acute purulent pericarditis, with left serofibrinous pleuritis and incipient lobar pneumonia. The left kidney and adrenal were absent and the ureter, a blind tube 8 cm. in length. The right kidney was small and contracted, interstitial nephritis. On microscopic examination the glomeruli were found three times their normal size. Dr. McCrae also gave the particulars of the other two cases of absence of the kidney in the hospital records, showing that in one other case there was also the same form of nephritis present. He suggested that the extra demands made upon a single kidney might be the cause of the nephritis in such cases, especially as they occurred at such a comparatively early age.

DR. ADAMI said that Dr. McCrae's remarks reminded him of a case he had shown before the society a few years previously, a child of 14, with enormous hypertrophy of the heart and arterio-sclerosis. Here, too, the left kidney was absent. One could not help feeling that there was an intimate relation between the work of the heart and the size of the kidney. Renal insufficiency was the cause of cardiac hypertrophy and dilatation.

DR. G. A. BROWN asked if the patient suffered very much from pain in the left side. He had operated some years ago upon a man with this symptom and found the left kidney absent.

DR. FINLEY, in reply, said that the patient had complained for two or three years of pain in the back and limbs, but never so severe as to suggest stone.

Cor Biloculare.

DR. D. P. ANDERSON reported this case which presented several anomalies not usually seen in this rare form of congenital malformation. The child when born weighed six pounds and presented all the signs of a healthy infant; 33 hours after birth, marked cyanosis was

noted and the extremities were cold and slightly œdematous. The pulse which had been 144 at birth became 150 to 155. Patency of the foramen ovale was looked upon as a probable explanation of the symptoms. The child's condition continued to get worse until its death, 44 hours after birth. At the partial autopsy the heart was found to consist of a single ventricle and single auricle, having but one communication. The anatomical relationships were explained by means of a diagram. Thus, there was a heart composed of two cavities only, and no evidence of any interventricular or interauricular septum. (The case with a diagram will be published in full later.)

Dr. Anderson could find no reference in the literature to any such extreme grade of this malformation and alluded to some of the reported cases.

Dr. Elder felt that if a complete autopsy had been made further malformations would have been discovered. This form of heart was common in the lower animal life.

Dr. Adami said this was a very rare condition and represented practically the state of the heart in the fish. The pulmonary arteries coming directly off the main trunk was interesting.

Dr. Anderson, in reply, said the heart had practically not developed after the fourth week or earlier.

An Unusual Case of Congenital Umbilical Hernia.

Dr. J. M. Elder showed a couple of photographs of a case of congenital hernia. The child was brought to him at the Montreal General Hospital the third day after its birth, presenting a large umbilical hernia. Over it was spread evidently the structures of the cord which had been ligated on the tumour and simply left tied there. The covering of the tumour, which was fully the size of an orange, was peritoneum and it contained fluid which apparently communicated with the peritoneal cavity. It was dull on percussion. Decomposition had set in and there was a little temperature, but beyond this there was no cause for alarm, the child's bowels having moved several times. Under chloroform the vessels of the cord at the bottom, close to the skin, were ligated and the tumour on being opened was found to contain the aorta, ascending and transverse colon, and a considerable length of small intestines. The parts were washed and irrigated and turned into the cavity of the abdomen and the opening closed as well as possible. The child was taken away to be nursed by its mother, returning to be dressed every day and made a good recovery.

Stated Meeting, October 17, 1902.

VICE-PRESIDENT, DR. H. S. BIRKETT, M.D., IN THE CHAIR.

Dr. W. H. P. Hill was elected a Resident Member of the Society.

A Case of Purpura.

DR. W. F. HAMILTON reported this case. See page 875.

DR. BIRKETT asked if the hæmorrhages were found on the buccal mucous membranes. He had had an opportunity of seeing two cases such as these, one showed extensive hæmorrhages of the buccal mucous membrane extending into the larynx; one into the tonsils was sufficiently large to destroy a portion of it. The second showed hæmorrhagic spots in the trachea, and accompanying it was the expectoration of blood. Both, though extremely severe, made a good recovery.

DR. ADAMI asked if there had been any blood examination in the case.

DR. HAMILTON, in reply, said that no further examination of the respiratory tract was made than by simply opening the mouth, but as the patient spat blood, there must have been similar conditions lower down. The blood was not examined regularly, but on three occasions cultures were made with ordinary precautions and nothing found. A practically normal finding was shown so far as red and white cells and hæmoglobin were concerned.

Preliminary Note on the Use of Antistreptococcus Serum in Scarlet Fever.

DR. G. A. CHARLTON read a paper with this title. See page 753 of the October number.

DR. BIRKETT asked if in any of the cases there had been a membranous angina.

DR. LABERGE three years ago had tried antistreptococcus serum in treating diphtheria. Of 26 cases he obtained a remarkably good result in only four, and all four were from the same institution. Three of them were very ill, but the symptoms disappeared completely by the end of three days. He thought that the antistreptococcus serum to be efficient must be derived from the same form of organism as affects the patients, and he hoped some day there would be on the market a serum in which all the different forms were represented. Last summer he had treated two smallpox patients, in one, which developed immense boils all over the body during convalescence, with most satisfactory results, but the other had been unaffected.

DR. ADAMI said that if it were not that Dr. Moser, together with other able men such as Paltauf and Escherich, had already published

their work on this subject and the results of Dr. Charlton were so in harmony with theirs, he would have doubted the wisdom of bringing the matter up at this time. As it was he was fully justified. In the results so far obtained there was much promise.

DR. MARTIN asked if the serum used was of the one variety and prepared from cultures all made at the same time. The good results might be due to using a very virulent serum, as it was well-known that the streptococcus was very variable.

DR. FISK while in the Civic Hospital in 1897, had had one experience with Marmorek's streptococcus serum, but without any favourable result, except that convalescence was more rapid than usual.

DR. CHARLTON, in reply, said he had used batches of serum from four different horses and all with equally good results. He was unable to give the process by which the serum was made, but it was carefully prepared. The antistreptococcus acts similarly in diphtheria, but while in scarlet fever one got 50 per cent. of the cases with secondary infection, in diphtheria only 8 or 10 per cent. were so affected. In nearly all of the cases there had been a pseudo-membrane and in 60 per cent. the membrane was on the tonsils.

A Case of Neuropathic Arthropathy.

DR. A. E. GARROW reported this case. (To be published next month.)

DR. JAMES STEWART drew attention to the unusual character of the case, in that it occurred in chronic myelitis, probably syphilitic in origin. Although most common in tabes, it was met with in other conditions.

DR. SHIRRES had seen the case in Burlington, where it was thought to be tuberculous in origin as scrapings from the skin lesion on the face proved that to be lupus. Apparently at first the condition was due to pressure involving the posterior columns and lateral tracts, as the patient had disturbance of sensation and a spastic condition of the limbs. He did not remember ever having seen mention of a case of Charcot's joint in the shoulder.

DR. ELDER was not satisfied with the proof that this was a Charcot's joint, the X-ray had not shown it and according to the report there was not any evidence of dislocation or the looseness associated with Charcot's joint.

DR. GARROW, in reply, stated that he had been careful not to call the condition a Charcot joint, but had classified it as one of neuropathic arthropathy. The symptoms as enumerated did not point to any form of infective arthritis that he was acquainted with and he consequently thought it must be classed under the above heading.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXXI. NOVEMBER, 1902. No. 11.

THE CIVIC HOSPITAL FOR INFECTIOUS DISEASES.

The urgent need of a well equipped modern hospital for the treatment of infectious diseases is brought home to members of the medical profession more than to any other class of the community. It is, therefore, a public duty on the part of the profession to urge the erection of such a building in Montreal at as early a date as possible, and the series of resolutions adopted after mature consideration by the Montreal Medico-Chirurgical Society, should go far to sweep away the irritating and wanton opposition to the erection of such a building.

The City Council have had prepared an elaborate set of plans for a hospital. Unfortunately, however, the question of site has given rise to a discussion which has dragged through the summer and even yet shows no signs of abtement. To our view the proposed site on Fletcher's Field adjoining the grounds of the Hotel Dieu is an ideal one. On rising ground, with park land on three sides, it offers perfect facilities for drainage and secures for ever an abundance of fresh air and sunlight. Another great advantage pointed out in the resolution

of the Medico-Chirurgical Society, is the central position of the site, thereby minimizing the tedious and exhausting drive in an ambulance and enabling physicians to visit their private patients at a moderate cost in time.

To the objection that it forms a menace to the health of families of citizens using the locality as a playground, there is not an iota of reason. Diphtheria and scarlatina, the two maladies for which provision is proposed, are well-known not to extend their infection beyond a limited area by aërial conduction. The experience of all large fever hospitals, many of them in densely crowded districts, all show that there is no undue prevalence of these ailments in their neighbourhoods. Every practitioner can recall instances in which patients suffering from these diseases have been successfully isolated in the top floors of dwelling houses, and in which the malady has been confined to a single case. Surrounded as the proposed civic hospital is to be by a plot of ground and walled off from the adjoining property, surely the dangers of infection cannot be said to exist beyond the hospital premises.

We cannot too earnestly impress on our city fathers the necessity of acting promptly and of pushing forward in the erection of a building so that it may be occupied during the winter, following the present one. Every case of infectious disease occurring in the poorer districts of the city now forms a menace to the public health, owing to the impossibility of securing isolation, and to the intercourse so often carelessly allowed with neighbours. The Civic Health Committee under Alderman Ames' chairmanship have carried out many reforms and they have the sympathy and co-operation of the entire profession in their uphill fight for an infectious hospital on the available site in Fletcher's Field.

NEW BOOKS, ETC., RECEIVED AND NOTED.

P. Blakiston's Son & Co., Philadelphia.

A Compend of Human Physiology. By Albert P. Brunaker, A.M., M.D. 11th edition. 1902.

Clinical Hematology: A Practical Guide in the Examination of the Blood with reference to Diagnosis. By John C. DaCosta, Jr., M.D. 1902.

A Guide to the Practical Examination of Urine. By James Tyson, M.D. 10th edition, 1902.

D. Appleton and Company, New York.

The Diseases of Infancy and Childhood. By L. Emmett Holt, M.D., LL.D. 2nd edition, 1902.

Lea Brothers & Co., Philadelphia and New York.

Progressive Medicine. Edited by Hobart Amory Hare, M.D. Vol. III., September, 1902.

Practical Diagnosis. The use of Symptoms and Physical Signs in the Diagnosis of Disease. By Hobart Amory Hare, M.D. 1902.

W. B. Saunders & Company, Philadelphia and London.

The International Text-Book of Surgery. By American and British Authors. Edited by J. Collis Warren, M.D., LL.D., Hon. F.R.C.S.Eng., and A. Pearce Gould, M.S., F.R.C.S. Second edition, thoroughly revised. Vol. I. and Vol. II., 1902.

A Text-Book of Materia Medica, Therapeutics and Pharmacology. By George P. Butler, Ph.G., M.D. Fourth edition, revised, 1902.

The Treatment of Fractures. By Charles L. Scudder, M.D. 3rd edition, 1902

Saunders' Medical Hand-Atlases. Atlas and Epitome of Traumatic Fractures and Dislocations. By Professor Dr. H. Helferich. Edited by Joseph C. Bloodgood, M.D. 1902.

A Text-Book of the Surgical Principles and Diseases of the Face, Mouth, and Jaws. By H. Horace Grant, A.M., M.D. 1902.

Atlas and Epitome of Hernias. By Dr. George Sultan. Edited by William B. Coley, M.D. 1902.

Saunders' Question-Compends. Essentials of Diseases of the Ear. By E. B. Gleason, S.B., M.D. 3rd edition, 1902.

Essentials of Histology. By Louis Leroy, B.S., M.D. 2nd edition, 1902.