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THE
CANADIAN PRACTITIONER

FORMERLY "THE CANADIAN JOURNAL OF MEDICAL SCIENCE."

EDITOR:

A. H. WRIGHT, B.A., M.D. Tor., M.R.C.S. England.

Business Management, - - THE J. E. BRYANT COMPANY (Limited), 58 Bay Street.

TORONTO, NOVEMBER 1, 1890.

Original Communications.

PUERPERAL ECLAMPSIA, WITH REPORT OF A CASE.*

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"An attack of puerperal convulsions is one of the most frightful accidents that can happen to a patient under labor," so says Ramsbotham; and, as it is a disease which should be interesting to the general practitioner, no less than to the specialist in obstetrics, both on account of its dangerous character, sudden nature of its symptoms, and not infrequent occurrence, I need offer no apology for bringing the subject before you; though it is not my intention to discuss it in all its bearings, but only to make a few remarks on its ætiology, pathology, and treatment, and to report a case which recently fell under my observation. I am very glad to know that the discussion is to be opened by a gentleman so well qualified to speak with authority on this subject, as Dr. A. H. Wright, and I hope he will be followed by many who have had extensive clinical experience; so that by a free interchange of views, especially on treatment, we may all learn much that will be valuable to ourselves and useful to our patients.

Lusk says, that one in eight of all deaths among pregnant women is due to eclampsia, and

that it occurs once in every 500 pregnancies. Other writers state its frequency variously at from once in 250 or 300, to once in 600 labors. Fatality to the mother, from being perhaps as high as seventy-five per cent., has in modern times fallen to twenty-five, or even less. The disease is most frequent in primiparæ and in twin pregnancies; illegitimate pregnancies would also seem to be more prone to its occurrence.

Without attempting to review the various theories that have been put forward from time to time regarding the pathology of this disease, I may say that I hold it to be due to an *auto-toxicæmia—uræmia* if you like that term better; and I think that the weight of modern authority inclines to this view. Carter's definition of uræmia explains very well what I mean; he says: "Uræmia may be defined as the altered condition of health caused by the accumulation within the body of poisonous products that should be eliminated by the kidneys." In a former paper, read by me before this Society, I discussed very fully the pathogenesis of uræmia in general, so that I need not here say more than that I believe the condition to be due to the toxic influence of various animal alkaloids, or leucomaines, and ptomaines, on the nerve centres. These toxa, produced either normally or under various abnormal conditions, should be removed from the blood by the kidneys, and when this excretion does not occur, or is incomplete, the nerve centres suffer, and the various phenomena of uræmia occur. Now, in the pregnant woman the conditions are somewhat different from those of the

*Read before the Toronto Medical Society, Oct. 16th, 1890.

non-pregnant state, and more strongly predispose to the development of this auto-toxæmia. There is a larger amount of effete matter to be got rid of; for the mother has to eliminate both her own excretions and those of her child. Then, again, there is little doubt but that the gravid uterus has a tendency to cause obstruction to the circulation, by its compression of the aorta, vena cava, renal vessels, and perhaps the ureters, especially in abnormal positions of the fœtus. A third predisposing cause is to be found in the fact that in pregnancy the nervous system is in a peculiarly excitable condition. This excitability is comparable to what is the rule during early childhood, when convulsive attacks are so common.

It seems to me that from a pathological point of view the cases may be divided into two classes: (1) Those in which there is no organic kidney lesion; (2) those where some such kidney lesion pre-exists and co-exists; and I believe the latter class to contain by far the greater number of cases.

The majority of puerperal convulsions are associated with albuminuria, and often with the presence of tube-casts, œdema, and other symptoms of Bright's Disease. It does not follow, however, that puerperal albuminuria is necessarily accompanied by eclampsia; nor, perhaps, does it always point to nephritis; but when albuminuria is discovered during gestation, especially in a primipara, it is a note of warning that we will do well not to disregard.

It is quite possible that under certain circumstances toxic material may accumulate in the blood to such an extent that even healthy kidneys cannot eliminate it rapidly enough, and so a condition of acute toxæmia arises, and may set up an eclamptic attack; but such cases must be rare. The fact remains, then, that nearly all cases of puerperal eclampsia are due to nephritis, either acute or chronic.

Some of the reasons why pregnant women are so liable to nephritis, I have already referred to. The kidney lesion may first make its appearance during gestation, or, what to my mind is more probable, a previously impaired kidney may be still farther damaged during that period, so that while in the non-pregnant state it was quite sufficient for the ordinary needs of the economy, it fails to do the extra duty

required during pregnancy. Perhaps if many of these cases were investigated we should find that there had been an attack of scarlatina in childhood, and the accompanying nephritis may never have been suspected.

Upon a proper understanding of the pathology of the disease must depend a rational treatment. If albuminuria makes its appearance during pregnancy, or dropsy, or any of the other symptoms which point to renal inadequacy, preventive measures should be at once adopted. The diet should be carefully regulated, and milk should form the main nitrogenous element; broths, soups, and beef essences should be avoided; but yolk of egg may be used freely; and farinaceous foods, prepared so as to be easily assimilable, should form the staple articles of diet. The bowels should be kept acting freely once or twice a day, by the use of mild aperients, preferably salines; and an ounce of potass. bitartrate may be taken every day in a pint of water or lemonade, to be drunk at intervals, as a diuretic. If the skin does not act freely, a vapor bath two or three times a week will be very useful. As there is usually anæmia, iron should be given in fairly large doses, unless otherwise contra-indicated; perhaps the best form is thirty minims of the tinct. ferri perchloridi three times a day after meals. This plan of treatment followed out for some weeks may prevent an attack of eclampsia when labor comes on, or at any rate rob it of much of its severity.

Treatment after the convulsions have really set in, or when the premonitory symptoms show that they are imminent, is to be discussed under two heads—*medical* and *obstetric*; and the methods to be adopted under the latter depend upon whether the eclampsia occurs before or after the period at which the fœtus is viable.

A great many remedies have been proposed for the treatment of puerperal convulsions, and I do not intend to weary you by even enumerating them all, but I will mention one or two. With regard to bleeding there has been and still is a decided difference of opinion among authorities, and the practice has still many earnest advocates. But if the view I have adopted of the nature of the disease be the correct one, then bleeding is rarely, if ever, indicated. I would go even farther and say it

is never justifiable. The beneficial effect that it sometimes apparently has may be secured by other means, and quite as promptly, too. The great majority of these patients are anæmic as it is, and can ill afford to lose any hæmoglobin, even though many of them look stout, strong, and well-nourished.

The great antidote for these cases is morphia; and, as it has to antagonize perhaps a considerable amount of poison, it must be given in comparatively large doses, gr. $\frac{1}{2}$ —ij., hypodermically, repeated as often as may be necessary to control the spasms, or rouse from the coma. This drug acts probably in two ways—(1) by diminishing the excitability of the nerve centres; and (2) as a physiological antagonist to the toxæmia in the blood. Morphia, however, is not to be used indiscriminately, and I would suggest as contra-indicating its employment, convulsions with contracted pupils. In most of the cases we have dilated or normal pupils, and in these, morphia is the remedy; but in some instances it would seem that a myotic poison is present in addition to the convulsants, and probably it is in these instances where morphia fails.

Another remedy is very highly spoken of by some authors recently, veratrum, and as a substitute for bleeding it is to be recommended. The tincture may be used hypodermically in m ii.—v. doses. Of chloral hydrate and potass. bromide, I need say nothing farther than that they are rather too slow in their action, though they are valuable adjuvants. Chloroform inhalations, of course, are very useful, and should be had recourse to when any obstetric operation is attempted. Brisk purgatives, too, like croton oil, sometimes do good. Diaphoresis should be encouraged by hot-water bottles, vapor baths, and the internal administration of jaborandi, or better, the hypodermic injection of pilocarpin. During the fits, which are usually of short duration, very little can be done, except to prevent the patient from injuring herself; but the treatment should be carried out in the intervals between the fits.

With regard to obstetric management, the course to be adopted depends on the period of gestation at which the convulsions come on. If before the foetus is viable, it will be well to let the uterus alone and attend to the medical treatment. But if this fails, the question of

emptying the uterus will present itself; this, however, should be the last resort.

If the convulsions come on after the foetus is viable, and before labor has begun, it is perhaps best, in the interests of both mother and child, that labor should be induced as rapidly as possible. The os should be dilated so as to admit of the application of the forceps if possible, or version may be performed. If the convulsions come on after labor has begun, and the pains are strong and regular, chloroform should be administered, and the case left to nature to complete the delivery; but if there is a prospect of the labor being prolonged from any cause, we should interfere, and effect delivery without delay.

I am aware that this is not the teaching of some of the text-books, but I hope this matter will be fully discussed by those of you who have had some experience in such cases.

I shall now relate a case which occurred to me this last summer, and which illustrates most of the points I have referred to, and which, I am happy to say, was followed by a good recovery to the mother though fatal for the child.

Mrs. W., referred to me by Dr. Baldwin, handsome brunette, æt. 25, height 5 ft. 6 in., weight, 130 lbs., youngest of a family of eight, married between three and four years, no children.

Family history: Maternal grandmother died of heart-disease; father living, æt. 63, in good health; mother died æt. 49, had always suffered from asthma, and for some years from heart disease and dropsy, she died from right hemiplegia, forty-eight hours after being seized. One brother died of typhoid fever; another brother now has asthma. Other members of the family have generally enjoyed good health.

Personal history: She had the ordinary diseases of childhood, including scarlatina when two years old, a slight attack. When about twenty she had some low fever and marked anæmia, with a good deal of lumbar pain, and trouble with the kidneys. Three years ago she had another attack of lumbar pain and some kidney trouble; and she has always been more or less anæmic. Menses began at age of thirteen and a-half, and were very irregular; at times amenorrhœa, then menorrhagia, never much pain; but latterly she has complained of a sharp pain

at the extremity of the coccyx, especially when sitting. After being married eighteen months and not becoming pregnant, she consulted a medical man, who found an elongated conical cervix uteri with a pin-hole os, narrow canal, and some anteflexion. This condition was corrected by Dr. Temple, whom she consulted in January, 1889; and after being under his treatment for some months, as a result she became pregnant about November, 1889. For some years she used to suffer from severe headaches two or three times a week, usually accompanied by nausea. The bowels generally were constipated. She felt much better in every way, however, during the first four or five months of pregnancy.

History of present illness: I saw her first on July 21st, 1890, about 11 p.m. She thought she was about the end of the eighth month of pregnancy, and had not been feeling as well as usual for over a week. She had had very severe headache, with sometimes vertigo and muscæ volitantes. She complained also of lumbar pains, heart-burn, nausea, and occasional vomiting. She was very anæmic, and there was a certain amount of general œdema, more marked in the lower extremities. She thought she was passing a normal quantity of urine. Her pulse was weak. She said she perspired easily and freely. An examination of the urine at this time gave the following result: Color, light yellow, muddy; reaction, acid, sp. gr., 1.025; albumen, on heating, almost solid; *deposit*, granular casts, vaginal, vesical, and renal epithelium.

I gave general directions about diet, recommending milk freely, but abstention from other nitrogenous food as far as possible. Fish or beef was allowed once or twice a week. The bowels were to be kept free with salines, and I ordered her to drink every day a pint or so of water in which was dissolved potass. bitart. \bar{v} . I prescribed also tr. ferri perchloridi *M.* xxx., tr. digitalis *M.* v., *ter in die*.

July 29th. Found considerable improvement, no bad symptoms. Urine, light yellow, muddy, acid, sp. gr. 1.012, 47 ozs. in 24 hrs.; albumin, over $\frac{5}{8}$; *deposit*, a few hyaline casts, some pus.

Aug. 1st. Symptoms continue good. I discontinued the digitalis, and gave tr. ferri perchloridi *M.* xxx., tr. quassiae *M.* xx., *ter in die*. The œdema of the face and upper extremities

has almost disappeared, though still present in the lower extremities.

Aug. 4th, 3 p.m. She has had some diarrhoea and colicky pains, which I thought might be accounted for by the fact that she ate some green corn yesterday. Otherwise she continues better. Urine, yellow, muddy, acid, sp. gr. 1.019; albumen, less than $\frac{1}{2}$; *deposit*, granular and hyaline casts, with some pus. Midnight—Summoned suddenly, and found her suffering intense pain from colic, with vomiting, which had come on two hours before. No indication of labor commencing. I gave her morph. sulph., gr. $\frac{1}{3}$ hypodermically, and she soon got complete relief from the colic; but it left her with a very severe headache and occasional vomiting, for which I ordered bismuthi subnit., gr. vii. ss., ac. hydrocyan dil. *M.* ij., every two hours; and cold to the head.

Aug. 5th, 4 a.m. She had a convulsion. I saw her between six and seven a.m., when she had had five convulsions, and now she had another typical one, with pupils somewhat dilated. I gave her morph. sulph. gr. $\frac{1}{3}$ hypodermically. The os uteri was not at all dilated. I sent for Dr. Temple in consultation; he arrived shortly after 7 a.m., and we determined to empty the uterus. The foetal heart could be easily heard. Chloroform was administered, the membranes were ruptured, and the cervix was with great difficulty dilated so as to admit of the application of the forceps, and she was delivered of a dead female, eight months foetus, about two hours after dilatation of the cervix was begun. It was a head presentation in L.O.A. position. The placenta and membranes were adherent, and were removed by the hand in the uterine cavity. There was very little hemorrhage. An intra-uterine douche of corrosive sublimate, \bar{i} in 5,000, was given. There was a good deal of bruising of the soft parts, and a laceration of the posterior fourchette extending up the mucous membrane of the vagina for about one and a-half inches. Three silk sutures were introduced, and, after washing off the external genitals with the corrosive sublimate solution, a napkin and binder were applied, and the uterus contracted well. She was still comatose, with the pupils strongly contracted, and temperature 97.6°F. Ice was applied to the head, and a hypodermic injection of pilocarpin hydrochlor., gr. $\frac{1}{4}$, given

This soon caused free diaphoresis, and after two hours there was a slight return of consciousness and some nausea. She was given sips of ice-cold whiskey, and, water at short intervals. The pupils remained contracted. Soon after delivery the bladder was emptied by catheter, and four ounces of urine obtained. This was smoky, muddy, acid, sp. gr. 1.017; albumin, nearly solid; deposit, blood, pus, renal epithelium, many granular, epithelial and hyaline casts, and numerous uric acid crystals. 6 p.m.—She had another convulsion, followed by a second an hour afterwards. I found her with a very weak, small, rapid, radial pulse, and unconscious. I administered *M. xv. tr. digitalis* hypodermically, with a beneficial effect on the pulse. The pupils still were strongly contracted. I gave a very grave prognosis, and the friends sent for Dr. Moorhouse in consultation, as Dr. Temple was out of town. About the time of his arrival she became violent and actively delirious. The pupils now became dilated, and the case forcibly reminded one of belladonna poisoning. We gave her morph. sulph. gr. $\frac{1}{2}$, and atropiæ sulph. gr. 1.100 hypodermically. After fifteen or twenty minutes she became quiet and slept till between 1 and 2 a.m. Then she woke conscious, expressed a desire to urinate, and passed several ounces of dark-colored urine (not saved). She then went to sleep again for some hours, and woke between 6 and 7 a.m., conscious, though a little flighty, and with no recollection of what had happened during the previous thirty hours. She complained of no pain, only a feeling of tenderness, and she had no nausea. I ordered iced milk and lime-water in small, frequent doses.

Aug. 6th, 11:30 a.m. Found her looking and feeling a good deal better, temp., 101°F.; pulse, 125, small. She had considerable thirst, and complained of inability to move the left leg. There was no paresis, but there was pain about the lower part of the abdomen on moving the thigh. She had passed about ten ounces of urine. I gave her a bichloride vaginal douche, and administered *tr. digitalis M. xx.* by mouth. I ordered two ounces of iced milk and limewater every half-hour, with ice pellets or sips of weak whiskey and ice-water frequently, to allay thirst. I also ordered magnes. sulph. $\bar{5}$ ss. in concentrated solution, to be given every two hours till

the bowels moved. 9 p.m.—temp., 101.8°F.; pulse, 132. The bowels had moved a little after two doses of magnes. sulph. There was some little abdominal pain, but no nausea. I gave her *tr. digitalis M. xx.* by mouth, and continued treatment as before, less the purgative.

Aug. 7th, 11 a.m. Found her quite bright and cheerful; temperature, 100.2°F.; pulse, 116. Bowels had moved and urine passed freely during the night. There was no abdominal pain or tenderness. I gave her a vaginal douche. The vulva was very sensitive, and she complained of hæmorrhoids. I gave her *tr. digitalis M. xv.* by mouth, and ordered *tr. ferri perchloridi M. xxx.*, *tr. digitalis M. viii.*, *ter in die*; also to drink potass. bitartras water; bread and milk was allowed, diet otherwise as before. 9:30 p.m.—temp., 100°F.; pulse, 120. Bowels moved and urine passed freely during the day, and she had been somewhat restless. Urine, by catheter bright yellow, clear, acid, sp. gr. 1.008; albumin a faint trace; reduced Fehling's solution; deposit, uric acid crystals, some pus corpuscles.

Aug. 8th, 4 p.m. Temp., 100.2°F.; pulse, 112; respirations, 23. Bowels moved early in the morning, and she passed urine freely. She now complained of pain on the left side about the lower angle of the scapula, evidently muscular. I gave her a vaginal douche, and allowed a more liberal diet. 11 p.m.—I was summoned suddenly, and found her complaining of a suffocating feeling round the heart, shooting pains in the epigastrium and over the abdomen; the stomach and colon were distended with flatus; there was no abdominal tenderness, no chill, nausea, or headache. I prescribed sp. ammon. aromat., sp. chloroformi aa. $\bar{5}$ i. to be given every hour till relieved; and ordered $\bar{3}$ ss. doses of magnes. sulph. every two hours till the bowels moved.

Aug. 9th, 11 a.m. She had rather a restless night, but is better this morning. Bowels moved freely and large amount of flatus passed, after two doses of magnes. sulph. Temp., 100°F.; pulse, 112. I gave her a vaginal douche, and removed the sutures; primary union had not been complete. The breasts were somewhat tense and painful, and I ordered them to be smeared night and morning with a mixture of equal parts of ex. belladonnæ and glycerin, and gentle pressure to be applied. I gave directions

for the douche to be given every 8 hrs., and as the iron did not seem to agree with the stomach, the dose was reduced one-half, and the following mixture prescribed: Sp. ammon. aromat., tr. chloroformi co. aa. ʒss. aq. menth. pip. ʒi. quaqu hora p. r. n. Urine, by catheter, light yellow, clear, acid, sp. gr. 1.012; albumin, trace, reduces Fehling's solution; *deposit*, epithelial, granular, and hyaline casts, pus corpuscles, epithelial cells, uric acid crystals.

August 10th. Had a good night, feeling much better. Temp., 99.2°F.; pulse, 110; breasts all right.

Aug. 11th. Temp., 99.3°F.; pulse, 106. She still complains of some discomfort in the stomach after taking the iron, so it was discontinued for the present, and tr. digitalis, *M. viii., ter in die.* given instead.

Aug. 12th. Much better, no stomach distress, temp., 100°F.; pulse, 90. Ordered douche to be given only night and morning.

Aug. 14th. She continues better. Temp., 98.8°F.; pulse, 80. The digitalis was discontinued. Urine, as passed, pale yellow, containing flocculent precipitate of mucus and pus, acid, sp. gr. 1.014, albumin, trace; does not reduce Fehling's solution; no casts found.

Aug. 16th. Still improving. Temp., 99°F.; pulse, 72. She complains a little of visual defects. The potass. bitartras was discontinued, and permission given to sit up for a short time next day.

Aug. 20th. I found her sitting up, having been up about four hours, and she had been up for an hour each day for two days previous. Once or twice she had had a very severe headache; and she required magnes. sulph. every second day to keep the bowels acting freely. She is passing a good quantity of urine. Temp., normal; pulse, 64. I ordered again tr. ferri perchloridi, *M. xxx.*, tr. digitalis, *M. v., ter in die.*, and McK. & R.'s pil. aloin, strych. et. belladonnæ No. 1, one pill *ter in die.*

Aug. 23rd. She says she feels very well; has had no headache. I ordered the douche to be given only once a day, and McK. & R. pills only twice a day, or as often as necessary to secure a regular daily motion. Urine, as passed, pale yellow, not quite clear, acid, sp. gr. 1.010, albumin, slightest trace; does not reduce Fehling's solution; *deposit*, a few epithelial and

hyaline casts; vaginal, vesical, and renal epithelium pus, and bleached red blood corpuscles.

Oct. 15th. She reports herself in excellent health and better than she has been for many months.

A PLEA FOR INTUBATION.

BY W. R. SHAW, M.D., L.R.C.P. LOND.

That this is no new operation, any one can convince himself of by reference to the literature on the subject; for although not done with instruments of our modern invention, yet it has been performed, for we have evidence of catheters having been passed into the larynx for obstruction, as far back as the days of Hippocrates.

Bouchut was perhaps the first modern enthusiast for this treatment of laryngeal stenosis due to any cause, and not meeting with any success, went to the other extreme, and ridiculed it as a means of preserving life. Consequently he dropped it, but it was again taken up by Dr. O'Dwyer, of New York, who, having worked industriously, has perfected instruments, and to-day Bouchut again acknowledges its applicability.

There are always many who are prejudiced against modern innovations in medicine, and who object to have old convictions replaced by new ideas, and it is to some of the objections raised by them that this paper is devoted.

The best method of procedure would be, perhaps, to compare the relative advantages of each operation, as it is only by a just comparison that a right opinion can be arrived at.

Speed.—To be sure, this is an advantage applicable to both operations, but it is in one case an essential always, and in the other only exceptionally. Who that has done many tracheotomies does not know that first of all comes the preparation of the bed, then of the instruments, the giving of the chloroform, and finally a slow deliberate operation? The parts are surrounded by many important vessels and veins, engorged at the time through insufficient aeration of the blood. It is preferable to open the air passages with the admission of as small a quantity of blood as possible. There are, we well know, on record, cases in which the operation has been performed with one stroke of the knife, and further, the

knife has been known to have gone further than the trachea. Foremost of all, perhaps, it should have been mentioned that the parents have to be prepared for the undertaking, and all medical men know what a difficult and unpleasant task it is. This has to be done in both cases, but is not surrounded with the same difficulties in intubation as in tracheotomy. In the operation of intubation, the child is held up, the gag is placed in the mouth, the finger is passed into the mouth, the tube is directed into the larynx, and, the obturator being removed, the operation is performed. Surely celerity and simplicity can be used as strong arguments in its favor. But let us pass on to the after-results, for it is then that the great troubles with tracheotomy begin. The shortest time in which the canula can be dispensed with is a week, and the average in which it *has* been done is between three and four weeks; the difficulty lying in the fact that it is a very hard matter to wean the patient from the tube. In one of our cases we were three months, owing to the fact that, when it had been withdrawn for a few hours, it had to be replaced because of a spasmodic attack of suffocation coming on. Also, we must consider the fact of there being a surface exposed to infection, and the care with which the patient has to be watched as to temperature of the room, etc., for fear of bronchitis, pneumonia, due to the introduction of air into the lungs in such an abnormal manner.

It is needless to remark that no wound is necessary in intubation, and hence one source of infection is dispensed with, and also the liability to pulmonary complications is materially lessened. Then the tube in the larynx is removed on the fourth or fifth day, but exceptionally it has to be replaced again.

Having thus compared the two, let us proceed to reply to a few of the objections raised to intubation, which of course do not appear in a controversy regarding tracheotomy alone. The first one which presents itself to my mind, is the insertion of the tube into the œsophagus instead of the larynx, and the consequent swallowing of it. That this has happened, we need but refer to the reports of cases by the various operators, but it is all provided against by having a silk attached to the tube of the proper length. The silk is never removed until, by the

cough and voice of the patient, the attending physician is sure that the tube is *in situ*. Then, again, as to the coughing it up and then swallowing it, there are records of such happening, but, as yet, no trouble has been experienced in those cases which have gone on to recovery, and the tube has been passed per rectum.

Secondly, the slipping of the tube into the trachea. With the tubes of the latest date, it is impossible for such an accident, owing to the largeness of the head, and where it has happened, it has been traced to the using of too small a tube, or one of the old style. But let us quote Dr. Dillon Brown on this accident: "This is an accident which, I believe, has never happened, and which, I believe, can never happen when a proper-sized tube is used, except as a result of injury to the larynx, made in attempt at removal. . . . The occurrence of this accident has been reported three times, but it seems to me that a careful analysis of these reports will show that such has not been the case. It should be remembered that the head of the tube, even if pushed below both the ventricular bands and the true cords, will still remain in the larynx, being held by its narrow sub-glottic division."

Injury to the larynx or vocal cords during intubation should not occur if proper care be used, and one of the great points to observe is, not to use force. If the tube does not go in the first time, it should be withdrawn and a second attempt made. Pushing membrane before the tubes is one of the strongest objections to their use, but it is of exceedingly rare occurrence, and it seems to me when such has happened it has been due to the improper introduction of it; as the tube and obturator form a wedge and have a tendency to divide, and not push before. But some teach, to get the tube engaged in the larynx, slip out the obturator, and then push the tube home with the finger. Anyone can see that it then becomes a gouge, which is the very thing to be avoided, and is fully guarded against by the construction of this instrument. But if membrane be pushed before the tube, then it only remains to rapidly extract it, and endeavor to produce expulsion by exciting cough, or the forceps, made for that complication, may be used.

Again, it is asked: Of what use are the tubes when the membrane extends below their lower

orifice? It seems to me that this is frequently the case; as how could membrane be expelled through the tube if it be not below? But such an argument is as much applicable against tracheotomy as intubation. But, of course, when the membrane has extended into the minute ramifications of the bronchi, then no operation will save the life.

Lastly, a short glance at the statistics of both operations will demonstrate that the proportion of deaths has not increased at all from this operation, but has been about the same. Of 806 cases of intubation, there were 221 recoveries, or 27.4 per cent. In 339 of these cases, death happened from pushing down membrane only twice; clogging of tube, twice; and neglect to notify when tube was coughed up, was the cause of death in four cases.

Up to the year 1888, Dr. Dillon Brown had collected statistics of 2,732 cases of intubation, with 646 recoveries, or 27.2 per cent.

Regarding the operation of tracheotomy, Drs. Lovett and Munro (quoted from Billings on Diphtheria) have tabulated 21,853 cases, with 6,138 recoveries, being 27 per cent.

Therefore, with such a relative proportion between the two, the simplicity of the operation of intubation, and all other things being considered, let us ask, should it not be preferable to tracheotomy?

P. S.—In using the term tracheotomy, it is needless to remark that it includes laryngo-tracheotomy and laryngotomy.

Selections.

CEREBRAL LOCALIZATION.

BY DR. DAVID FERRIER.

(*An Abstract—Continued.*)

MOTOR CENTRES.

It has been established by experiments on monkeys—and now so generally admitted that it is almost unnecessary to enter into detailed proof—that the destruction of the centres, excitation of which produces definite movements, causes paralysis of the same movements on the opposite side of the body, varying in degree, completeness, and duration, with the extent of the destruction of the respective centres. When the

destruction is complete, the paralysis is permanent, and is followed in due course by descending degeneration of the pyramidal tracts of the spinal cord, and secondary contraction in the paralysed limbs. In illustration of this Ferrier narrates the result of an experiment on a monkey, which was exhibited at the International Congress in London, 1881—eight months after operation. In this there was motor paralysis, but cutaneous sensibility was unimpaired throughout. Another experiment is referred to.

Many similar experiments have been recorded by Horsley and Schafer, and their observations on the functions of the marginal convolution deserve special note. Extirpation of the marginal convolution causes paralysis of those movements which remain more or less unaffected by the destruction of the centres on the convex aspect of the hemispheres; namely, movements of the trunk, those of the hip muscles, as well as some of those of the leg. In order, however, that these movements should be entirely paralysed, it is necessary that the marginal convolution should be destroyed in both hemispheres; as it would seem that the trunk movements are so bilaterally co-ordinated in the marginal convolution, that the removal of one only is not sufficient to cause any marked effect. When both are removed, however, the most absolute paralysis of the trunk muscles is induced. "The attitude and general appearance of a monkey in which this double lesion has been produced is most striking. Instead of sitting up with back somewhat curved, in the manner normal to monkeys, an animal which has been submitted to this operation lies prone, with his legs and feet outstretched (or, at most, with flexed hips), back flat, tail straight and motionless, and arms put forward to clutch at any neighboring object. The head retains its power of rotation, as well as flexion and extension, and the movements of the eyes and facial muscles appear normal. The animal frequently props itself upon its elbows, but never assumes the normal sitting attitude. If the animal desires to sit up it can only do so by dragging itself into the sitting posture by its arms and hands, and holding on by these to the wires of the cage, or to any neighboring object. If the hold should be detached the animal tends to fall over. Progression is effected almost entirely with the arms, the monkey dragging itself

along by the aid of these, assisted by the flexion which occurs at the hips; the legs are quite limp and dragged, the dorsal surface of the toes being drawn over the ground."

Besides the movements of the trunk there are others which are bilaterally represented in each cerebral hemisphere. This holds in respect to the upper facial region, as well as those of the larynx. Hence, unilateral extirpation of the centres of these movements causes no, or scarcely any, perceptible impairment; and it is necessary that the centres should be destroyed on both sides in order that paralysis should result. It has been shown in monkeys that unilateral extirpation of the laryngeal centres does not appreciably impair the adduction of the vocal cords, whereas phonation becomes volitionally impossible when the centres are destroyed in both hemispheres.

It would appear that such movements as are not primarily bilaterally represented in each cerebral hemisphere are secondarily associated in accordance with a hypothesis, originally advanced by Broadbent, by comensual fibres connecting the vulvar and spinal nuclei with each other. Though moderate stimulation of the cortical centres of the limbs gives rise to movements, as a rule, only on the opposite side, yet it not infrequently happens, if the stimulation be increased, that movements occur in the limbs on both sides. These are, however, more pronounced on the opposite than on the same side. In the monkey, as well as in man, it is not unusual to find descending degeneration in both lateral columns as the result of unilateral cortical lesions.

It was first pointed out by Brown-Sequard that lesions which induce hemiplegia of the opposite side also cause some diminution in the energy of the movements of the limbs on the same side. This is a result which we should expect if each hemisphere were in relations with both sides of the body.

The bilateral relations of each hemisphere which exist to some extent in the monkey and in man are more marked in the case of dogs and the lower animals. The bilateral representation accounts for a certain amount of recovery, even when the motor centres of one hemisphere have been completely destroyed. It has now been established beyond all question that cortical

lesions of the motor zone in man, if they are such as actually to destroy and not merely to push aside the gray matter of the respective centres, invariably cause paralysis of volitional motion in the related parts. Such results have followed not only the distinctive lesions of disease, but also surgical excisions of the the cortical centres. Not only does general hemiplegia result from lesions of the whole of the Rolandic area, but limited lesions cause limited paralysis, or monoplegia of the face, arm, and leg, in precise correspondence with the results of experiments on monkeys.

Apart from motor paralysis Ferrier has not been able to detect the slightest impairment of special, or tactile and general sensibility after destruction of the motor centres. It is unquestionable also that in man paralysis from lesion of the motor area is, in the majority of instances, an essentially motor affection, and is unaccompanied by any discoverable defect of tactile, muscular, or general sensibility.

Ferrier does not consider that the sensory aura which occasionally precedes, or accompanies a localized epileptiform spasm can be taken as a proof that the motor and sensory areas coincide. It may prove contiguity, functional or anatomical, but not coincidence. For the most careful investigation in a large number of cases has failed to detect the slightest impairment of any of the forms of sensibility, while the motor affection has been of the most pronounced character.

Voluntary movements are capable of being carried out in the entire absence of all sense of movement. A patient, anæsthetic from spinal disease, was able to co-ordinate his limbs perfectly, and move them freely and forcibly with the aid of vision; and even without the aid of vision to employ them with a fair degree of precision and steadiness. Though the patient is able to move the anæsthetic limb voluntarily, he has no knowledge of its position or the resistance which may be offered to its intended movement.

From various observations Ferrier concludes that the motor centres of the cortex are not the centres of tactile or general sensibility, nor are they the centres of muscular sense, but that they are motor in precisely the same sense as other motor centres; and though functionally and organically connected, are anatomically differenti-

ated from the centres of sensation, general as well as special.

FRONTAL CENTRES.

The region of the brain which lies in front of the Rolandic area, and marked off by the pre-central sulcus, is one respecting the functions of which there is still considerable doubt. Anatomically it is related to the motor tracts of the internal capsule. These tracts, according to the investigations of Flechsig, lie in the inner portion of the foot of the crus, and connect the frontal lobe with the opposite cerebellar hemisphere indirectly through the gray matter of the pons. The effect of electrical irritation, combined with those of destruction, more particularly of the post-frontal region, indicate that this part is related to the lateral movements of the head and eyes. Irritation, as we have seen, causes opening of the eyes, dilatation of the pupils, and conjugate deviation of the head and eyes to the opposite side. At the moment of destruction of this region in the one hemisphere there always occurs a temporary deviation of the head and eyes to the side of lesion. This, however, is only transient, even when the destruction has been almost if not absolutely complete. In two experiments, after bilateral destruction of the post-frontal area, the animals were unable to turn the head or eyes to either side for a day after the operation. The removal of the pre-frontal region alone caused no discoverable physiological symptom, either sensory or motor. But Ferrier has found that after the symptoms which followed destruction of the post-frontal area had entirely disappeared, the subsequent destruction of the pre-frontal area induced paralysis of the head and eyes of exactly the same nature as before.

Ferrier has recently extirpated, practically, the whole of the frontal region of the left hemisphere. When the animal began to move about a few hours after the operation, it was observed to turn round from right to left, and the head when at rest tended towards the left side. The right eyelid dropped considerably, and the right pupil was distinctly smaller than the left. Next day the conjugate deviation of the eyes continued, and they could not be turned to the right, but the lateral deviation of the head was not so pronounced. The inclination of the head towards the left gradually diminished, but the inability to turn

the eyes to the right continued during the whole time of the animal's revival. It died suddenly from cerebral hemorrhage ten days after the operation. In this case the conjugate deviation of the eyes continued longer than Ferrier had observed it in any former experiment, and this was no doubt in relation with the almost, if not complete, removal of the frontal lobe.

This experiment shows that destruction of the frontal region causes not only conjugate deviation of the head and eyes, but also a temporary paralysis of those movements which are also excited by electrical stimulation, namely, elevation of the eyelids and dilatation of the pupils.

There is reason for believing, therefore, that the lateral movements of the head and eyes are not capable of being permanently paralysed, unless every portion of the frontal region be completely destroyed. Beyond these, Ferrier has never been able to discover any other physiological symptoms on removal of the frontal lobe. He has never observed any affection of vision.

In addition to the paralysis of the movements of the head and eyes on destruction of the frontal lobes, Ferrier has observed a defect which he has endeavored to correlate with the inability to look at, or direct the gaze towards, objects which do not spontaneously fall within the field of vision. It is a form of mental degradation which appears to depend on the loss of the faculty of attention, and Ferrier's hypothesis is that the power of attention is intimately related to the volitional movements of the head and eyes.

The recorded cases of injury and disease of the frontal lobes in man are in accordance with the negative character of the experimental lesions, unilateral or bilateral, so far as relates to the sensory and motor faculties in general; and in certain an intellectual deficiency and instability of character have been observed, not unlike those occurring in monkeys and in dogs.

MOTOR PARALYSIS RESULTING FROM THE HYPODERMIC INJECTION OF ETHER.—(By David Wallace, F.R.C.S. Ed., read before the Medico-Chirurgical Society, Edinburgh, April 2, 1890).—For the hypodermic injection of ether there are two generally recognized methods: 1st, it may be injected subcutaneously into the cellu

lar tissue immediately under the skin; or, 2nd, it may be injected deeply into the belly of a muscle. When we use the former plan there may be a little emphysema produced by the rapid volatilization of the ether, and the small operation is associated with a little pain. If, on the other hand, we inject the ether deeply into a muscle, there is no pain, but there is a risk of a deep-seated abscess forming. Ether is, however, a powerful antiseptic, and therefore, even if the needle used for the injection be not absolutely aseptic, the risk of this latter accident is small.

CASE I.—During the evening of January 15th of this year I was watching a patient who suffered from an acute inflammatory swelling in the neck, which had been freely incised an hour or two previously. The patient suddenly became collapsed to such a degree that the radial pulse was imperceptible. As rapidly as possible I gave an injection of ether hypodermically, pushing the needle into the most accessible part of the body, viz., the extensor aspect of the left forearm at the junction of the lower and middle thirds. I injected about 20 minims of ether sulphuricus. The patient recovered from the collapse, but next morning I was struck by the fact that he had paralysis of the extensor group of muscles of the forearm. On analysis of this paralysis, I found the whole of the muscles supplied by the posterior interosseous nerve completely paralyzed. There was, however, no “drop wrist,” the extensor carpi radialis longior serving to prevent this. It was obvious that the paralysis was due not to compression of the musculo-spiral nerve during sleep, but to some cause affecting its chief muscular branch, the posterior interosseous nerve.

CASE II.—On 28th January, ten days after the occurrence of Case I., Professor Chiene had occasion to perform excision of the testicle. Towards the end of the operation it was observed that the patient was very pale and the pulse small and weak. It was deemed advisable to inject ether, and this was done by the doctor in much the same way as in Case I. At the most accessible part, the back of the forearm, 20 minims of ether sulphuricus were injected deeply, the needle being pushed as rapidly as possible into the arm. On the following day the patient was discovered to have

paralysis of the muscles supplied by the posterior interosseous nerve, although not to such a marked extent as in the first patient, as he still retained some power of extending the ring and middle fingers.

The first case having been more directly under my own observation than the second, I may describe to the Society its subsequent history, dismissing the latter case with the remark that at the present time (nine weeks after the occurrence of the paralysis) the patient has not fully regained the use of his hand, although voluntary power of the affected muscles is gradually returning.

The subsequent history of Case I. has been as follows:—During the first week the patient was so ill that nothing could be done to treat the paralytic condition other than placing the hand in the most comfortable position for the patient. At the end of the week massage was begun and regularly used twice daily, while the patient was at the same time directed to constantly endeavor to use the muscles, the power of which had been lost. This treatment was continued for one week, but gave rise to no improvement. Blisters over the course of the posterior interosseous nerve were then applied, but their application produced no visible change in the condition, and it was therefore decided to use electricity. Faradism produced no contraction of the muscles, even when the current was sufficient to cause severe pain. Galvanism was therefore had recourse to. On the 14th February, one month after the paralysis occurred, Dr. Wyllie—who kindly undertook the electrical treatment—examined the arm carefully. He found the only muscles of the outer border and back of the forearm not paralyzed were the supinator longus, the extensor carpi radialis longior, and the anconeus, *i.e.*, all the muscles supplied by the posterior interosseous nerve were paralyzed. They were at the same time markedly atrophied. The other muscles of the forearm were in their natural condition. The common sensibility was unaltered. The current produced by 45 Laclanche cells—a current sufficient to pass through the extensor muscles to the flexors—was required to get contraction of the affected muscles on the first day of the application, but two days later the current from 27 cells produced an equal amount

of contraction. After the daily application of galvanism for one week, the muscle contractions were sufficient to partially extend the thumb and fingers.

On March 8th—that is, after three weeks of galvanism—the wasted muscles were found to have greatly increased in bulk and firmness, and their passive resistance to the flexors was such that the fist could be firmly closed. There was, however, no power of voluntary movement.

On March 15th, eight weeks from date of paralysis and after four weeks of galvanism, the middle and ring fingers could be voluntarily extended, and a week later the little finger could be extended, while slight abduction of the thumb was got by the action of the extensor ossis metacarpi pollicis and extensor secundi internodii pollicis. The primi internodii pollicis was still devoid of any voluntary movement. At this date the interrupted current was again tried, but stimulation of the musculo-spiral or posterior interosseous nerves had no visible effect on the extensors.

Present Condition.—The patient has rather more power of abducting the thumb, and can slightly dorsiflex the fingers. The hand generally is much more useful. The muscles which have their nerve supply from the highest part of the posterior interosseous nerve are those which can be chiefly used by the patient, *i.e.*, those muscles supplied by twigs furthest away from the point of the injection of the ether.

The gradually increasing strength of the muscles may perhaps be better gauged by the result of the dynamometric examinations made at stated intervals:—

On 22nd February, with left hand 70 lbs., right 275 lbs.

On 18th March, with left hand 80 lbs., right 275 lbs.

On 1st April, with left hand, 170 lbs., right 275 lbs.

For an explanation of the paralysis two thoughts naturally suggest themselves—first, that the posterior interosseous nerve trunk was pierced by the needle, and the ether injected directly into the trunk of the nerve; second, that the ether used was a bad preparation, and had a neurolytic action, or that it had a local

toxic action which affected the nerve just as in lead or alcoholic poisoning. The latter explanation can be dismissed, as on testing the ether it was found to be a good preparation. The former explanation has to be considered from an anatomical point of view. Normally the posterior interosseous nerve trunk would be situated about three inches above the point where the needle was introduced, and if we subtract an inch from that distance for the length of the needle, the nerve trunk would be still two inches distant. The likelihood of an abnormal distribution of the nerve is minimized by the accident occurring in two cases, but further any abnormality of the nerve is very rare. Quain does not mention any example of its occurrence.

The explanation would rather seem to be that the ether after injection would diffuse most rapidly through the intermuscular spaces, and as it is in these that the nerve branches chiefly lie, the ether coming into contact with these branches would cause coagulation and destruction of the constituents of the nerves, and in that way destroy their conducting power. Then the immediate local effect would probably be followed by some degeneration of the nerve going to a higher level, while neuritis would be set up as indicated by the pain felt by the patient during the first three or four weeks of the paralysis. This explanation is borne out by an experiment performed by Lauder Brunton and his assistants, and quoted by the former in the Croonian Lectures on the Relationship between Chemical Structure and Physiological Action. The method employed in this experiment was to take "the sciatic nerve of a frog with the gastrocnemius muscle attached, so that its contraction and non-contraction when the nerve was stimulated might serve as an index for the presence or absence of functional activity in the nerve. Alcohol and ether, when applied so as to act on the nerve trunk, destroyed conductivity before irritability, so that stimulation applied to the nerve further away from the muscle than the part acted on by the ether gave no effect, while when applied nearer the muscle than the part affected by the ether there was contraction of the muscle."

Since these two cases have come under my notice I have tried, in every way open to me, to find references to similar cases, but have only

succeeded in finding one, which was kindly supplied to me by Dr. Lauder Brunton. There is no mention of such an accident in any of the medical works to which I have referred. The two cases I have quoted seem to bear out the conclusions arrived at by M. Arnozan:—

First, That paralysis may be caused by the injection of ether deeply into muscles.

Second, That the prognosis is favorable, and although recovery may be long delayed, yet it does take place.

Third, That galvanism hastens the cure in a very marked fashion.

Further, I think that the possibility of such an accident occurring indicates that when we use hypodermic injections of ether the ether should be introduced subcutaneously; but if put deeply into a muscle, we should choose a fleshy muscle, such as the deltoid or gluteus maximus, where there is less risk of the ether in a concentrated form reaching the nerve branches than when it is injected into such a part as the extensor aspect of the forearm. In future I shall, even in cases of threatened syncope, take the little while necessary to pinch up the skin and inject subcutaneously.—*Edinburgh Medical Journal*.

NOTE ON THE TREATMENT OF COLD ABSCESS.
—(By F. M. Caird, F.R.C.S, Ed., Assistant Surgeon, Royal Infirmary; Lecturer on Surgery before the Medico-Chirurgical Society of Edinburgh, 2nd July 1890.) During the past few years various methods of treatment for large cold abscess have been introduced. These have had for their object the reduction of the somewhat protracted stay in hospital which has hitherto been necessary, as well as a corresponding diminution in the amount of dressing and the anxious care which such cases afford. Sir Joseph Lister's plan of opening and draining the abscess with the most stringent antiseptic precautions, while at the same time continuous rest was obtained by means of the long splint, extension and careful nursing, was one in which the vitality of the surrounding tissues was called into play to react upon the abscess wall and cause its absorption. The results as seen in his practice (*vide* Mr. Watson Cheyne's *Antiseptic Surgery*) are simply unrivalled, and constitute an enduring monument to the training,

zeal, and fidelity of his house surgeons and staff. The time occupied in the absorption of the pyogenic membrane and in the cure of the associated caries is, however, often very lengthy, and the slightest mishap at dressing may undo the care of months. Attempts have therefore been made to obviate this by a direct attack on the unhealthy granulation tissue of the abscess wall, either by the introduction of suitable agents, such as iodoform, or by removing it with the sharp spoon, and endeavouring to get the raw surfaces to unite by means of judicious support, pressure, or buried sutures. It is to illustrate what may be done by removal of the abscess wall and the attempt to get a union by the first intention that the following cases are recorded. The method is briefly as follows:—The patient having been chloroformed and the skin shaved and carefully purified with carbolic lotion (1 to 20), the abscess is opened by a small incision, into which the finger is at once passed. The whole of the wall which is accessible is now scraped bare with the finger nail. It is easy to feel the pyogenic membrane peeling off in large flakes and shreds, and the finger readily recognises when a perfectly raw surface is left. If the entire extent of the wall is not accessible, a second incision is made, the first opening is plugged, and from the second aperture the remainder of the cavity is now scraped bare. It is advisable not to allow any pus to escape, since one can more easily strip off the lining membrane and judge of the thoroughness of the scraping when the abscess is distended. With the finger-nail we may scrape away the granulation tissue with impunity from off important structures, and the finger pulp tells exactly how much is being done and how much has to be done—in this respect differing widely from the sharp spoon, which cannot be used with the same freedom or accuracy. The pus is now allowed to escape, and the cavity is thoroughly washed out with boiled boracic lotion, warm, until the fluid streams away clear and transparent. Very short tubes may now be inserted if need be, and a couple of sutures should be put in the wound, but not tightened up. The dressing consists of a large mass of moist gauze wrung out of carbolic lotion, and over that a large corrosive wool mass, secured in position by carefully-applied bandages of domet. Over all

a piece of elastic webbing is carried, and the patient kept absolutely quiet in bed by means of suitable splints. On the following day the tubes may be removed and the stitches tightened up. Future dressings are determined by the rules common to antiseptic surgery.

Case 1.—C. H., æt. 22, a nursemaid from Shetland, was admitted to the Royal Infirmary suffering from a large gluteal abscess. Family history and general state of health good. About two years ago she fell on the ice. The buttock then gradually became swollen; she limped slightly; complained of nocturnal pain, and lately has had starting of the limb. Prolonged rest and iodine applications have been tried without benefit. On examination there is found a large fluctuating mass, which lies under the gluteus maximus, and extends from the anterior superior spine to below the gluteal fold, causing the right buttock to project enormously. The abscess was opened, as above indicated, on 12th July. It was dressed on the 13th, 14th, 15th, 17th, 19th, and 21st. On the 23rd a collodion dressing was applied, and on the 8th of August she left for Shetland.

Case 2.—H. C., æt. 48, crofter, Shetland; family history uncertain. In March last, gaining the crest of a hill, he was blown over by a gust of wind. He was thrown on his hip, and experienced great pain in the thigh and spine. In June swelling of the thigh was marked. It was aspirated on two occasions, but latterly has rapidly increased. He is in poor health, has lost flesh rapidly, is rheumatic, and suffers from iritis. The abscess stretches from the lower third of the thigh upwards, and is lost and ill-defined beneath the gluteal muscles. On 24th September the abscess was treated. Two incisions were requisite on account of the size of the cavity, and the finger was inserted and the wall scraped from one incision above the gluteal fold, and a second about the middle of the thigh. A long splint was applied, and daily dressings made use of till 27th September. On the 2nd October the long splint was removed. The limb was again dressed on the 5th October. A little serum was found on changing the dressing on the 13th and 19th October. The patient left on the 24th healed.

Case 3.—K. F., æt. 7, suffers from Pott's curvature and double psoas abscess. In the

right groin there is a scar due to an abscess which was opened last year, and for which she was treated for eight months in a hospital. Each lumbar region and groin is occupied by a large fluctuating swelling. The abscesses are evidently distinct and separate, and do not communicate across the spine. On January 1st, 1890, each collection was opened below Poupert's ligament; the finger was then introduced and the wall scraped as far as possible. A large bougie was then introduced, and the point made to project in the loin, where it was cut down upon, the finger again inserted here, and the scraping of the upper portions of the cavities completed. The right collection contained pure serum alone; the left contained pus, and on the left side of the second lumbar vertebra a distinct hollow was found, from which were removed three small portions of necrosed bone. The walls of this depression were rather smooth and not distinctly carious. A double long splint was applied. The patient had headache, diarrhoea, retracted abdomen, and dilated pupils for a day or two after the operation, and her condition gave rise to some uneasiness. It was thought advisable to dress rather frequently in this case from the risk of soiled dressings. On the 18th January the left side was sound, and on February 12th the right side was healed. She was kept in bed till March 18th.

Case 4.—J. M'K., æt. 16, sawyer, Killen. A strumous lad, who already has had excision of his left os calcis, and who suffers from phthisis, caries of the left ankle, and abscess of the popliteal space. On the 28th October the foot was removed, and the abscess which filled the popliteal space was scraped. On the following day it was dressed and the sutures tightened. There is no further record of dressing, but on the 28th November he left for home healed. On re-admission with disease of the right hip-joint, the popliteal space was found sound and well. Similar results were gained in a comparatively short space of time in a series of ten smaller chronic abscesses of the neck and lower extremity. Two cases were not successful, but in one of these, in which the pus lay beneath the calf muscles and extended into the popliteal space, no splint was applied, and the wound became septic. The other case was already septic, and the imperfect clearing out of long sinuses

TREATMENT OF EPISTAXIS.—By Benjamin Ward Richardson, M.D., F.R.S.—The surgeon may discard mere empirical plans for his own rational methods, the production of a firm coagulum, and the maintenance of a gentle but decisive pressure. These two objects are met by a good styptic plug, and no plug answers so well as one made of cotton, charged with perchloride of iron. If the cotton be sufficiently moistened to admit of being nicely modeled, it may be made firm and shapeable enough to be passed, like a bougie, along the nasal canal quite into the pharynx, and, formed like a wedge, can easily be made to fill firmly the whole of the canal, as completely as if it were drawn up through the pharynx from behind; and it may, if necessary, be pulled down into the throat through the pharynx, so as to make the wedge the firmer and more secure. After the cavity is thoroughly plugged on the bleeding side, or if necessary on both sides, a gentle pressure may be applied to the nostril with the fingers, until the plug, soon charged with coagulated blood, is firmly set; and this effected, absolute rest for ten or twelve hours is sufficient to effect a cure; but it is wise not to remove the plug until it can easily be blown out of the nostril by the patient. In the *New York Medical Record* Dr. Friedenberg suggests another very simple and effective mode of plugging, which he thinks is as good as Bellocq's cannula. He takes a piece of rubber drainage-tubing of small calibre, but of sufficient resiliency, and about ten inches in length. One end of this he introduces into the nasal cavity, and pushes it along the floor of the inferior meatus, through the clots, until it reaches the pharynx. Catching the ends in the pharynx with the forceps, he draws it out by the mouth, attaches to it a small compact wad of elastic lamb's wool, rolled in iodoform gauze, and drawing upon the nasal end, slips the wad into the post-pharyngeal space, and stretches the tube until the cessation of all trickling of blood down the post-pharyngeal wall shows that the post-nasal aperture is occluded. Then, still keeping the tubing taut, he packs the anterior nasal recesses with long strips of iodoform gauze all round the tubing, ties a knot in the rubber close to its exit at the nostril, and through it passes a cross-piece of tubing of large calibre, just long enough to fit easily into the

nostril. Finally, he releases the end of the rubber, and so leaves in the bleeding cavity a firm plug, which can be easily removed by drawing the tube a little way out and dividing it behind the knot. It appears to me that this is a most simple and excellent mode of plugging, and that any good styptic like tannin or iron perchloride may be well applied by it. I should prefer it to Bellocq's cannula, which I have made use of with less success than I had anticipated. In addition to the local treatment named above, it is always good practice to administer a saline purgative, of which none can be better than the late Dr. Druitt's "Haustus magnesiæ sulphatis acidus":—

R.	Magnesiæ sulphatis,	ʒj-iv	
	Syrup, aurantii,	fʒij	
	Acid, sulphurici dil.,	mx-xx	
	Aquæ,	ʒiʒss.	M

Fiat haustus.

This draught may be administered with advantage in a wineglass of water, twice a day, for a day or two after the hemorrhage has ceased.—*Coll. and Clin. Record.*

THE EMPLOYMENT OF ICHTHYOL IN DISEASES OF WOMEN.—In his father's clinic, Freund saw remarkably good results from the use of ichthyol in various diseases of the sexual organs. Its favorable results depended mostly on its sorbefacient properties. Old chronic parametritis, chronic and subacute parametritis with exudations or cicatricial bands, cicatrices of the vagina, of the fornix vaginæ and of the vaginal portion (of the cervix), chronic inflammation of the tubes and ovaries, were most favorably influenced. Cicatrices became thin and soft, swollen tubes were emptied of their contents. The administration was partly internal in form of pills, partly in the form of vaginal tampons of a mixture of ichthyol and glycerine, ointments for friction over the abdominal walls, painting of the part with pure sulpho-ichthyolate of ammonium. No injurious results were observed from the use of this drug.—*Berlin Klin. Wochenschr*, 1890, 11. *Deutsch. Med. Wochenschr*, 1890, 26. *Med. Chir. Rundschau*, Aug. 1st, 1890.—G.A.F.

A valuable general tonic for females :—

R.	Syr. Hypophos. Comp.	4 oz.
	Aletris Cordial [Rio]	4 oz.

M. Sig. Two teaspoonfuls before meals.

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TORONTO, NOVEMBER 1, 1890.

SCIENTIFIC AND PRACTICAL MEDICINE.

It is pretty generally recognized as a truism, that students in Medicine should cultivate both the Science and the Art. The advances in Science during recent years have been wonderful, and our medical colleges have found it difficult to keep abreast of the times. In fact, a large majority, especially on this continent, are sadly deficient in their facilities for teaching modern science. It unfortunately happens that modern requirements in this direction involve a great increase in expense. As Sir William Turner expressed it in his opening address, delivered at Queen's College, Birmingham: "Money is the sinews of education as well as of war. The higher education is an expensive luxury." The people of Edinburgh recognized this fact a few years ago, when they raised, by public subscription, \$800,000 for the building and equipment of a new school for the teaching of Medicine in the University in that city.

Dr. J. E. Graham, in his opening lecture for the Medical Faculty of the University of Toronto, referred to the expense connected with the teaching, and gave instances of great liberality shown to medical colleges in various parts of the world, such as \$6,000,000 to Johns Hopkins University and Hospital, and \$80,000 a year by California to the Medical Faculty of its University, etc. Probably the most remarkable instance of such generosity mentioned by Dr. Graham, was that of the Canton of Zurich, with about 200,000 inhabitants, which gives to its University \$50,000 a year. For Canada, he could not say much as a whole, but he spoke of the large gifts

from private citizens to McGill University. In Toronto, the amounts donated to educational institutions have not been numerous. The McMaster bequest of over a million dollars is the largest, and is now the mainstay of McMaster University. The gift of \$100,000 by the late Senator Macdonald, towards a University Park Hospital, was a most generous one, and is likely, in the near future, to bring forth rich fruit in the shape of further contributions to the same object. The recent disaster to the Provincial University has called forth generous responses to the appeals of her friends. Such examples are infective, and we hope that as the city grows in wealth her citizens will become still more liberal.

Are we, in Medicine, paying too much attention to Science and too little to Art? This question is now being discussed in Great Britain. Mr. Lawson Tait set the ball rolling at the recent meeting of the British Medical Association, when he attacked, in his usual trenchant style, what he called "that senseless system of biological teaching which has set in as a fashion at Cambridge, at Oxford, and at Edinburgh." Many are the comments that have been made on his remarkable address; but, happily, he stands almost alone in Great Britain in his attitude towards scientific teaching in Medicine. Many of the orators at the opening exercises, notably Sir William Turner and Sir James Paget, entered a most emphatic protest against such sneers.

Sir William Turner says: "One sometimes hears the question asked, 'Why should a medical student spend so many months in the study of these subjects which have little, if any, direct relation to the treatment of disease, when his time might more fitly be spent in the wards of a hospital, or in otherwise attending the sick or hurt?' I am one of the last to undervalue a thorough system of clinical training; but I hold that the best preparation for it is the cultivation of a scientific spirit and method, of the power of seeing things correctly, and of giving a proper interpretation to the meaning of what is seen."

Sir James Paget, in referring to the amusing stories of the failuries of the scientific men, says: "But that which may be held most certainly is that there is absolutely nothing in medical practice which cannot be learned by the student of Science, and that the student of Science may

learn many things in practice of which the practical man will remain ignorant. . . . Education in Science in the formation of the mind brings about a fitness for accurate and careful observation; for, let it be remembered, that these sciences which are especially called preliminary sciences—for so they are intended,—are well fitted to lead the way towards the ability to study that which is by far the most difficult in the biological class of sciences—the study of diseases and the manner of treatment.”

The opinions of these distinguished teachers of anatomy and surgery must, of necessity, carry great weight. Few will undertake to controvert them. Again comes the question, “Is it possible to cultivate the scientific aspect of Medicine at the expense of the practical?” We believe it is, and think that Germany furnishes many examples of one-sided teaching, while Great Britain makes few such mistakes. We should ever remember, however, one thing—if a man does not learn Science in his student days, he never does; but if he gets a proper scientific basis while at college, he may become as practical as you wish afterwards. On the whole, the British plan, which has been adopted by some of our Canadian colleges, of teaching Science in the laboratories for two years, and practical Medicine for the two remaining years of the course, is a thoroughly safe one, and likely to lead to the best results in the long run.

LADY DOCTORS IN INDIA.—The male practitioner, excluded alike by his sex and his religion, has had in the past no opportunity for the exercise of his art among the women of the east, and, more particularly in India, lady practitioners have found a sphere of usefulness and have accomplished good work. Quite recently, however, it is said that native opinion has undergone a change. In the hospital of Lucknow, for example, it is usually found that native female patients decidedly prefer to be treated by gentleman in the civil or military medical service, and this notwithstanding that the women’s ward is under the care of a female practitioner. The women of this class, however, are likely to be of inferior caste and of low social status, and it is not to be expected that the higher caste women will share these advanced views, at all events for some time to come.

CURRENT MEDICAL LITERATURE.—Those who, from time to time, wish to gain access to recent writings on any one medical topic often experience great difficulty. There are so many sources of publication both at home and abroad, that one is puzzled to know where to look. We notice that a supplement is now being published to the *British Medical Journal*; it is a weekly epitome of current medical literature. Short abstracts are given of many important papers, and the matter is arranged under appropriate headings of medicine, obstetrics, anatomy, etc. This publication will be found of great service to the readers of this journal.

THE ALLEGED RETURN OF LA GRIPPE.—It has been stated that several cases of influenza have recently occurred in London, England. On investigation, however, there seems to be but slender foundation for the report. One leading practitioner there, however, had under his observation four cases of influenza occurring in one family early in September.

CORRECTION.—By an unfortunate printers’ error in the report of the proceedings of the meeting of the American Association of Obstetricians and Gynæcologists, in last issue, the words “liver” and “kidney” were transposed in Dr. M. Price’s case of gunshot wound of the abdomen.

Meeting of Medical Societies.

THE TORONTO MEDICAL SOCIETY.

October 2nd, 1890.

The President, Dr. Spencer, in the chair.

The President delivered an address in which, after thanking the members for his election, he referred to the work which had been done by the society in the past, and expressed the hope that even better work would be accomplished during the present session. He suggested some alteration in the programme so as add greater variety to the proceedings; an evening might be devoted to medico-legal discussions when some of the more prominent men at the bar might be induced to attend in order that opinions might be expressed from a legal standpoint; another evening might be devoted to

social intercourse, when light refreshments would be provided, and the proceedings throughout be of an informal and convivial character. The President suggested that from among our members we should form the nucleus of a medical defence union, similar to those which exist in other countries, so that if any one of our members should become involved in legal difficulties his case should be thoroughly investigated, and the aid of fellow practitioners tendered to him if necessary. The President closed his address by expressing the hope that each individual member would do his best to advance the interests of the society.

The President was followed by Dr. R. A. Reeve, Dr. J. E. Graham, and Dr. T. C. Coverton, who each addressed the Society, giving an account of their recent experiences abroad, referring specially to the International Congress held at Berlin.

October 9th, 1890.

The President, Dr. Spencer, in the chair.

Dr. Dame showed a placenta to which two fœtuses has been attached, one had died at the third month of gestation, the other at the seventh month. There was a history of a fall three months before delivery which might have accounted for the death of the fœtus at the third month.

Dr. A. A. Macdonald presented a small bottle full of calculous debris which had been passed from time to time by an old gentleman aged 80. Attacks of renal colic came on at irregular intervals followed by the passage of the calculous material; the urine was always of acid reaction.

Dr. Cameron presented six faceted calculi, all of equal size, measuring about half an inch in diameter. They were removed from a man aged 60.

Dr. Grasett presented a multilocular cystic ovarian tumor, and Dr. Cameron presented a similar specimen.

Dr. R. A. Reeve exhibited a patient suffering from exophthalmos. This case was of very great interest, and the following history was narrated: The patient, a young man, was kicked on the right lower jaw by a horse; he sustained a fracture of the jaw just in front of the masseter muscle, he was not rendered unconsci-

ous; two days after he suffered from tinnitus aurium on the right side, and this has been constant since; this was at first of a shrill character, now a whirring sound, aggravated when he lies down; five weeks after the accident when fixation apparatus was removed, he observed a protrusion of the right eye, this has since continued; he suffers discomfort but no pain; there is double vision; he has paralysis of the external rectus and cannot move the eyeball outwards. The displacement of the globe is forwards, downwards, and outwards; the eye jumps forward one millimeter during each pulsation; the eye can be forced back into the orbit if pressure at the same time be applied to the common carotid; thrill and bruit are distinctly heard on auscultation over the right side of the head; there is engorgement of the vessels of the eye and œdema at the inner canthus, there is, too, some hyperæmia of the conjunctiva. The term exophthalmos describes some of the symptoms but not the diagnosis. Many years ago the condition was said to be due to aneurism of the ophthalmic artery, but, in the light of our present knowledge, we know that this is extremely doubtful. In twenty-one post-mortem examinations only three exhibited aneurism. There is usually a lesion of the internal carotid artery and a communication established between the internal carotid artery and the cavernous sinus, so that the blood current forces its way into the ophthalmic vein and its branches and to the angular and facial veins. Many cases are due to traumatism, other cases are due to a form of trauma, as expulsive efforts during parturition. The treatment may be that of ligature of the common carotid artery. Fifty-five per cent. have thus been cured; of fifty-four cases, eight died. Digital compression may be tried. There are a number of cases of spontaneous recovery. In the case under consideration there is no pain, and the symptoms are not urgent, therefore a formidable operation is not justifiable. He is at present having digital compression applied over the common carotid, and the administration internally of iodine of potassium and ergot. The condition of the eye differs from that which persists in exophthalmic goitre, in that the lid moves downwards with the globe, whereas in exophthalmic goitre

the movement downwards of the upper lid is delayed. The use of styptics or the introduction of needles into the orbit is not to be recommended. With regard to the dangers consequent upon the formation of a coagulum or an embolus, however, one must remember that the blood current in the veins involved would tend to carry particles away from the brain instead of towards it, and, therefore, the dangers consequent upon the formation of a coagulum in ordinary aneurismal dilatations does not exist here.

Dr. Cameron preferred the term proptosis to exophthalmos in such a case. He did not think that ergot would be of much value in the treatment, and asked Dr. Reeve if a restricted dietary might not be advantageously combined with the administration of the iodine of potassium?

Dr. McPhedran, Dr. MacCallum, Dr. Pepler, Dr. Primrose, and Dr. Grasett discussed some points in the case and Dr. Reeve replied.

October 16th, 1890.

The President, Dr. Spencer, in the chair.

Dr. Spencer showed the stomach of a man who had committed suicide by taking some corrosive poison. The stomach was full, the mucous membrane of the œsophageal end was white, a large portion of the remainder of the mucous membrane was denuded and a portion congested; the lips, fauces, and œsophagus, exhibited whitened patches.

Dr. Acheson read his paper on

PUERPERAL CONVULSIONS

which appears at page 489 of THE CANADIAN PRACTITIONER.

Dr. A. Wright said that puerperal convulsions in his opinion were not the same as uræmic; there were some points of difference in the symptoms, e.g., the temperature in the former rises very high, whereas in the latter it is usually subnormal. The preventive treatment is the more important; he administers epsom salts and iron tonics in puerperal dropsy, and if convulsions supervene, the administration hypodermically of large doses of morphia has proved most beneficial.

Dr. Machell spoke of three classes of cases. 1st. The full blood, where bleeding might be justifiable. 2nd. The anæmic and weakly

patients, where morphia and chloroform would be useful, and bleeding not justifiable. 3rd. Where the exciting cause is nervous, occurring particularly in young girls with illegitimate children, often no albuminuria, and the kidneys healthy. Chloroform would be indicated in such cases. Dr. Machell condemned a routine form of treatment and advocated treating each case on its merits.

Dr. A. A. Macdonald referred to the use of croton oil as a quickly acting purgative, and the administration of chloroform during the convulsions.

Dr. Spencer and Dr. Carveth also took part in the discussion, and Dr. Acheson replied.

Pathology.

IMMUNITY.

Now that the germ theory of their origin has fairly been proven in connection with a number of the more important diseases, and also that inoculation with an attenuated form of the virus, or a previous accidental attack of the disease itself, protects from future attacks in certain of these troubles, without any appreciable risk to the patient's life, the question naturally presents itself, "What is it that protects the inoculated animal?" Not that this problem has not suggested itself before and answers been attempted; but only recently, and as a result of advances in bacteriology and chemistry, has an answer based on experiment been possible.

Four theories have been suggested, in favor of all of which something can be said. It has been held—

1. That by an attack of an infectious disease, or by inoculation, a chemical substance is produced in the animal organism which prevents a recurrence more or less surely.

2. That the micro-organisms introduced consume a certain pabulum existing in the tissues, and in so doing render them unfit to support another growth of the germ, and, therefore, forbid a future attack.

3. That the tissues of the animal body naturally resist to a greater or less extent all disease germs, in virtue of an hereditary endowment. This theory accounts for *natural* immunity only, not for *acquired*.

4. That the leucocytes are able to combat to a certain extent the invading germs. This is Metchinkoff's theory, and seems properly to fall under the third division. The weakness of this as a complete explanation is evident.

There appears to be no doubt that in certain cases the leucocytes do attack and make away with bacteria, as, for example, the leucocyte of the frog and the anthrax bacillus at an ordinary temperature. One can imagine this theory accounting for the *natural* immunity which certain individuals possess with regard to certain diseases, but by no means for *acquired* immunity.

A number of workers have recently been publishing their results, and it looks as though the knot were presently to be untied. Amongst those who have had notable results, are Buchner, Roux, Wooldridge, and Hankin. Certain of these gentlemen have shown that immunity can be conferred as well by inoculation with a solution of the life products of germs, as with the microbes themselves. This has been called "Chemical Immunity" as opposed to "Vaccinal Immunity."

It was supposed that the ptomaines produced by the different microbes were concerned in the production of this so-called chemical immunity. Up to this time, however, no one has been able to produce immunity by inoculation with isolated ptomaines.

Hankin's work seems to go far to show that *albumoses* are the poisonous agents in germ diseases, and he has produced protection by using minute doses of the same material which in greater quantities cause disease. Thus we have definitely settled *one* method at least of artificially producing immunity.

With regard to natural immunity it has been demonstrated that blood serum kills certain bacteria. In this connection Hankin reports the discovery of what he has named a "Defensive proteid," viz., a globulin separated from lymphatic gland tissue. This has the power of killing anthrax bacilli. He thinks that this globulin is identical with a proteid separated from lymph cells by Haliburton.

Judging by these results, and the fact that the work is still being zealously prosecuted, we seem to be justified in looking for a not far distant settlement, by actual experiment, of many questions upon which we have hitherto theorized only.

J. C.

LANDRY'S PARALYSIS.

In November, 1889, Centanni reported the discovery of a micro-organism in a case of Landry's paralysis. This was in the form of a bacillus, present in great numbers, and located in the peripheral nerves. The changes induced by the germ were those of acute interstitial neuritis,—ascending. Slight changes, if any, were found in the spinal cord. More recently (May, 1890) a case has been reported in the *Brit. Med. Jour.*, and the pathology suggested in this case is quite different. The reporter suggests (from clinical study) that the phenomena are the result of a gradual effusion of fluid into the central canal of the spinal cord with consequent pressure effects; the distention of the canal taking place from below upwards of course. The cause of the effusion is supposed to be congestion resulting from a chill.

J. C.

Correspondence.

Editor of THE CANADIAN PRACTITIONER:

SIR,—Upon first reading your remarks in PRACTITIONER for Aug. 16th, I looked on them as an adverse criticism to my communication. A closer perusal makes them appear in a different light, and with most of them I agree. My object in writing that article was to dissent from what I consider a too meddlesome midwifery, as taught in a paper read by Dr. Temple at the Ontario Medical Association, and since the writing of my first article emphasized with even greater stringency by Dr. Cameron, before the Canada Medical Association. Each of these leaders, in their papers, insist on the use of bichloride solutions, injections, and washings with pharasaical minuteness.

Cleanliness in all things is a *sine qua non* to success in midwifery. But bichloride solutions are not everything; indeed, they are not without danger, even in the hands of the most skilled, and with the unskilled or ignorant may do much harm. The person of the surgeon and the body of the patient may both be antiseptic, and still if the discharges are allowed to soak through on to the mattress or even carpet of room, if this has not been removed, decomposition will take place, germs will be produced, and fever will be the result.

But how is this possible with macintoshes, blankets, and all other conveniences? Well, it is possible, but not probable. But many have not these appliances and still have babies. And if they have them delays take place and the baby is on hand before the bed is prepared, the bed becomes soiled, and if great care is not taken to see that all is removed, and everything clean and dry, a very serious condition of affairs may soon be the result.

Homœopathy in medicine was the result of over-medication and too little knowledge of the power of nature to cure herself. As surgery, and with it midwifery are now being taught, we will soon require a Hahnemann there too. I wrote my article, not with the intention of posing as any such a hero, but only to give the result of my eleven years' practice in the every day routine, knowing the use of all the best drugs and most approved appliances, and using them when necessary, but also allowing nature to work in her own field and often in her own way.

I would like to hear from some of my fellow plodders, and then from those who use all the minutiae as prescribed by our specialists, compare the two results, and from these comparisons build up a common-sense practice.

You say that some great minds cannot grasp the simple instructions as to cleanliness in midwifery. I think that a truly great mind will not only grasp them, but also carry them out wherever necessary, and at all times will recognize nature's powers, and not ascribe to medicine work done by nature.

But many small minds spend all their time in seeking for the infinitesimal, which found in the form of a bacillus, a microbe, or other germ life, will deify it, and pay their daily devotions to a congenial spirit.

J. JARDINE, M.D.

541 Dundas St., London, Oct. 8th, 1890.

Editor of CANADIAN PRACTITIONER:

SIR,—Since a relation between malaria and hæmoglobinuria is considered as not unlikely, and some Italian physicians have gone so far as to state that they believe the large amount of quinine, which they are in the habit of giving, may be an important factor in producing hæmoglobinuria, I thought it would be of interest to relate my observations in the treatment

of the late epidemic of influenza. In all my cases I employed small doses of quinine, the maximum dose for an adult being in no case exceeded by five grains, and this given only once, followed by two or three grains after an interval of six or eight hours; the first dose was successful in all cases in relieving the pain completely within half an hour, so that the patients desired no more treatment except when the attack was followed by a cough, when an expectorant was usually employed. Children were given smaller doses in proportion, with a like happy termination of the most distressing feature of the malady. Now, where other practitioners gave larger doses of quinine, as ten grains or more, the symptoms were in no way ameliorated but were rather intensified, besides the disease lasted a considerable time, accompanied by the severe pains, even when there were no complications. Also in the cases treated by other physicians with other remedies, notably, antipyrin and similar analgesics, the urgent symptoms were slightly improved from time to time as the remedy was employed, but they did not seem to limit the duration of the attack in the least. Besides, those treated by the latter remedies seemed to be followed by a greater number of and more serious complications, whereas those treated by small doses of quinine were followed in my hands by exceedingly few complications, and these mostly of a bronchial character, and all recovered in a short time, to my great satisfaction. The highest temperature in my cases of influenza was $104\frac{1}{2}^{\circ}$ noted in two cases, one in a girl of fifteen, and the other in a woman of forty years of age, and the lowest two or three degrees below normal, in a man of fifty-seven following a somewhat severe attack of angina pectoris. A great many have told me that treatment in the influenza was of no use, but I can not believe it after an experience as detailed above.

Yours truly,

F. T. BIBBY.

Port Hope, Oct. 17th, 1890.

The civil, military, and naval departments of the British Government are supplied with the Fairchild Digestive products, and the Fairchild preparations for the predigestion of milk, etc., are especially preferred in India.

Book Notices.

A Text-book of Practical Therapeutics, with Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By H. A. Hare, M.D., Professor of Therapeutics in the University of Pennsylvania. Philadelphia: Lea Brothers & Co.

This is the very work one would expect from the author of it; a judicious combination of the scientific and practical, such as every intelligent physician desires and appreciates. The hand of the clinician and the physiologist is evident in it.

Reviews.

The Science and Art of Obstetrics. By Theophilus Parvin, M.D., L.L.D., Professor of Obstetrics in Jefferson Medical College, Philadelphia, etc. Second edition, revised and enlarged. Philadelphia: Lea Brothers & Co.

The first edition of Parvin's *Obstetrics* appeared four years ago, and was very favorably reviewed by medical journals in various parts of the world, including THE CANADIAN PRACTITIONER. It is a very excellent book for both student and practitioner, and has been largely used as a text-book in many medical colleges in the United States. In Canada it has not replaced Playfair or Gallabin, which are the favorites with students and teachers. The present edition shows a few changes and additions which are not, as a rule, very important; but they are sufficient to bring the book fully abreast of the times in all respects.

Pamphlets and Reprints.

Arsenite of Copper. By John Aulde, M.D., Philadelphia.

The Use of Rhus Toxicodendron. By John Aulde, M.D.

Clinical Reports on Arsenite of Copper. By John Aulde, M.D.

On the Treatment of Eczema in Elderly People.

By L. D. Bulkley, A.M., M.D., New York.

Is There a Fundamental Difference Between the Contraction of the Heart and Ordinary Strained Muscle? By Thomas J. Mays, M.D.

Suggestive Therapeutics — a Treatise on the Nature and Uses of Hypnotism. By H. Bernheim, M.D., Professor in the Faculty of Medicine at Nancy; translated by A. Herter, M.D. New York and London: G. P. Putnam's Sons.

Professor Bernheim, in common with the Nancy School, claims that hypnotic sleep is not a pathological sleep; that the hypnotic condition is not a neurosis, analogous to hysteria.

Now that the daily press is being filled with accounts of the dangerous possibilities of hypnotism in the hands of criminals, there is special interest in the positive statement of the author that no one can be hypnotized unless he has the idea that he is going to be; that anyone that does not want to be hypnotized, and who knows that he need not be influenced if he does not wish to be, successfully resists every trial.

Anyone will be interested in the reading of this book, even should he conclude, as does Sir Andrew Clark, that in fifteen years hypnotism will be as dead as mesmerism now is.

Personal.

DR. CARSON, of Toronto, sailed for England on October 11th. He was very ill at the time of his departure.

Dr. L. McFARLANE returned to Toronto on Monday, Oct. 20th. After the receipt of injury (a compound fracture of the leg, about three inches above the ankle joint), he remained five weeks in Brooklyn. The union was not thought to be very firm, but a plaster splint was applied, and the doctor completed his journey to Toronto without any mishap. He is doing well and expects soon to get out on his rounds.

Births, Marriages, and Deaths.

BIRTHS.

GRANT—On Oct. 11th, at Ottawa, the wife of Dr. J. A. Grant, jr., of a daughter.

SMELLIE—At Port Arthur, Sept. 28th, the wife of T. S. T. Smellie, Esq., M.D., of a son.

MARRIAGES.

RUTHERFORD—MAXWELL—At Morrisburg, October 13th, D. B. Rutherford, M.D., of Belleville, to Isabel, eldest daughter of Frank B. Maxwell.

SUTHERLAND—RICHARDSON—At Toronto, on October 7th, R. Ross Sutherland, of Winnipeg, to Miss Nan Richardson, youngest daughter of Dr. Richardson.

GREGORY—PATTULLO—At Toronto, on Wednesday, October 15th, 1890, Walter Dymond Gregory, barrister-at-law, to Mary Frances, eldest daughter of Dr. Pattullo, of Toronto.

REYNOLDS—LOGIE—On October 22nd, at Hamilton, Thomas William Reynolds, M.D., Assistant Superintendent of the Hamilton Asylum, to Mary Lawrason, second daughter of the late Alexander Logie, Esq., Judge of the County of Wentworth.

Miscellaneous.

REPORT OF THE NEW YORK PASTEUR INSTITUTE.

Dr. Paul Gibier, director of the New York Pasteur Institute, begs to inform you of the results of the preventive inoculations against hydrophobia performed at this institute since its opening (February 18th, 1890).

To date 610 persons, having been bitten by dogs or cats, came to be treated. These patients may be divided in two categories:

1st. For 480 of these persons, it was demonstrated that the animals which attacked them were not mad. Consequently the patients were

sent back after having had their wounds attended, during the proper length of time, when it was necessary. Four hundred patients of this series were consulted or treated gratis.

2nd. In 130 cases the anti-hydrophobic treatment was applied, hydrophobia having been demonstrated by veterinary examination of the animals which inflicted bites or by the inoculation in the laboratory, and in many cases by the death of some other persons or animals bitten by the same dogs. All these persons are, to-day, enjoying good health. In eighty cases the patients received the treatment free of charge.

The persons treated were: 64 from New York, 12 from New Jersey, 12 from Massachusetts, 8 from Connecticut, 9 from Illinois, 3 from Missouri, 3 from North Carolina, 3 from Pennsylvania, 2 from New Hampshire, 2 from Georgia, 2 from Texas; 1 each from Maryland, Maine, Kentucky, Ohio, Arizona, Iowa, Nebraska, Arkansas, Louisiana, and Ontario, Can.

With kindest regards of the Pasteur Institute,
PAUL GIBIER.

New York, Oct. 15th, 1890.

Chicago Polyclinic.

THE SECOND SPECIAL

Course for Practitioners

—ON—

ABDOMINAL AND PELVIC SURGERY,

—WITH—

Demonstrations upon Dogs and Cadavers.

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—BEGINNING—

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AND CONTINUING TWO WEEKS.

FOR PARTICULARS ADDRESS

DR. M. R. BROWN, COR.-SEC,

174 E. Chicago Ave., Chicago.