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## Original Articles

### THE USE AND ABUSE OF THE OBSTETRIC FORCEPS

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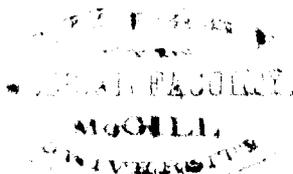
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My first duty must be to thank you for the honor done me in being asked to address you to-night. I accepted the invitation with a feeling of great misgiving as to my ability adequately to discharge the duties required of me, and I must confess that this feeling did not diminish as my address began to take shape, and that perhaps it reaches its acme at the present moment, as I face this audience of my fellow practitioners.

In choosing a subject I had to bear in mind that it should be one of general interest, and at the same time one not too hackneyed. When I tell you that I propose to speak on the use of the obstetric forceps you may think that whilst the first condition is fulfilled, the second is hardly met. Yet it holds in obstetrics, as in other departments of medicine, that a review of the commoner lines of treatment is required from time to time. This is necessary, not only because our conception of the indications for such treatment becomes modified, but also because more modern methods may offer better and safer means of arriving at the desired result.

In no department of medicine is custom and routine so difficult to overcome as in obstetrics. We are afraid to step aside from the beaten path, lest if things go wrong we be blamed. The public requires to be educated, and the public is slow to learn. For these reasons therefore it is well that at such gatherings as this we should consider critically some of the commoner and more

\*Address in Obstetrics, read before the Ontario Medical Association, June, 1914.



ordinary procedures, and enquire whether we are getting from them all that they are capable of giving; whether recent advances may not have given us something which will better meet the case.

The obstetric forceps have been in use since the seventeenth century. There is no more fascinating story in the history of medicine than that telling of their invention and modification. Peter Chamberlen, who died in London in 1631, is generally given credit for their introduction. He was a member of a remarkable family of barber-surgeons and man-midwives, who were accoucheurs successively to the wives of Charles I., Charles II., James II. and William III. The secret of the forceps was carefully guarded in this family for a number of years, but was finally sold in Holland by a grand-nephew of the inventor.

These first instruments were very crude. In the intervening years they have been modified and improved, first by the addition of a pelvic curve, which enabled them to be used whilst the head was still high in the pelvic cavity, and later by the introduction of axis traction, by which the force exerted could be accurately directed. So that we have to-day in the modern axis traction forceps an instrument well nigh perfect for the work required of it. This very efficiency of the instrument is indeed one of its dangers, in that we may be led to expect too much of it.

There is demanded of every obstetrical operative procedure, first safety to the life of the mother, and a minimum of injury or bad after results, and secondly, the safety of the child. The operation we select in a given case demands in all instances the most careful consideration, and we must possess an accurate knowledge of its scope and limitations. The indications for forceps are so many, and they are so frequently employed, that in the exceptional case we are apt to expect too much of them, and so over-step the margin of safety above defined.

Let us consider some of the limitations which this margin of safety imposes. The first and most obvious contra-indication to their use is the absence of full dilation of the cervix. The forceps is an instrument for the second stage of labor; it has no place at all in the first. This is a rule laid down in every text-book of obstetrics, yet sometimes transgressed. The bad results of this too early application of the instrument may not be apparent at the time, but those of us who practise gynecology are only too familiar with them. There can be no doubt that the vast majority of deep lacerations of the cervix are produced in this way. A certain amount of laceration occurs in every first labor, and occasionally a deep tear may occur in an otherwise normal

delivery. But a careful history of the previous obstetrical experiences of the patients admitted to our gynecological wards leaves no doubt that the badly torn cervix, in the majority of instances, is the result of premature forceps application.

This is common knowledge, but it is not so generally recognized that other lesions may result, notably retro-displacement of the uterus and prolapse. The normal position of the uterus is maintained to a large extent by the firm tissue in the bases of the broad ligaments, connecting it with the side walls of the pelvis. Any stretching or relaxation of these fascial layers will result in uterine displacement. When forceps are applied to the head through an undilated cervix, and traction exerted, the margins of the cervix tend to contract. The pull is therefore exerted, not only on the child's head, but also on the uterus. Before the cervix gives way a very considerable strain may have been put on the fascia of the pelvis, which later manifests itself in uterine displacement. In this way is produced the clinical picture so often presented, torn perineum, torn cervix, prolapsed vaginal walls, and retro-displacement of the uterus.

Knowing the results likely to follow, are we then ever justified in applying forceps through the cervix not fully dilated? The answer, I think, must be *no*. If circumstances demand rapid delivery the cervix should first be dilated manually if it is soft and yielding, or incised in the middle line anteriorly or bilaterally, according to Dührssen's procedure, if it is rigid. Such incisions should, of course, be sutured immediately after delivery is effected. Mere prolongation of the first stage of labor, from whatever cause, never justifies forceps application for its completion. The child is seldom in danger in such circumstances. If the mother is becoming exhausted and tired out we have in morphine, combined with scopolamin, the means to give her rest. If the pains are feeble and ineffective pituitrin can generally be relied upon to strengthen them. A judicious exhibition of those three drugs in proper sequence robs the first stage of labor of most of its difficulties.

There has been considerable discussion in the past as to the indications for the application of forceps in the second stage of labor. The frequency with which they are applied varies with the individual operator, and differs in hospital and in private practice. We have lately very considerably diminished the number of forceps applications by the administration of pituitary extract. In 171 cases, delivered up to date in the public ward of the new Burnside Obstetrical Hospital, forceps have been ap-

plied only 38 times. Thirty-nine out of a total of 68 semi-private patients in the same hospital were delivered by the forceps operation.

Given certain conditions, there can be no doubt that a timely application of forceps saves the mother much suffering, whilst exposing her to a minimum of immediate injury and later morbid processes, and is not prejudicial to the child. The conditions necessary are that the presentation be a normal one, that there be no disproportion between the pelvis and the foetal head, and that the head be engaged and well moulded. Under such circumstances labor would be terminated naturally if it were allowed to proceed, but we think it right to interfere in the belief that such interference will result in less injury than would otherwise occur. Provided a rigid aseptic technique is followed, there is practically no danger. If circumstances are such that rigid asepsis cannot be observed the case is better left to nature. That the head is engaged and well moulded implies that the second stage of labor has been in progress for some time. The moulding of the head is a most important factor in the mechanism, and its absence may make all the difference between a difficult and an easy forceps delivery.

When we have to deal with a case in which there is disproportion between the pelvis and the foetal head we are faced with a difficult problem. We must be guided by the extent of this disproportion rather than by pelvic measurements. Years ago Barbour pointed out that "the foetal head is the best pelvimeter." Müller showed us the importance of gauging the size of the pelvic inlet by pressing the head down into it, and later Munro Kerr described his method for ascertaining if there were any over-lapping when this was done. Kerr's method is to anaesthetise the patient, press down the head into the pelvic brim with the left hand, and with two fingers of the right hand in the vagina estimate the amount of engagement, and then ascertain the degree of over-lapping by palpating with the thumb along the pelvic brim.

Careful pelvic measurements must be made in every case, as from them we can form a rough estimate of the amount of difficulty likely to be encountered, and in the major degree of pelvic contraction get a definite indication for the best line of treatment. A conjugate diameter of less than three inches is an absolute indication for the performance of Cesarean section if a living child is to be born. It is in the pelvis with a conjugate diameter of between three inches and three and three-quarters

that we may be in doubt as to the best method of treatment to employ. In such the Müller-Kerr method is most valuable.

Let us look at the results we may expect from forceps delivery in such cases. With that degree of contraction the fetal head will still be movable about the brim during the first stage and early in the second stage of labor. To apply forceps to the floating head under such circumstances is to invite disaster. It is extremely unlikely that a living child will be delivered, and the risk of injury to the maternal passages is very great. Many authorities hold that forceps should never be applied under any circumstances to the head movable above the brim. Whilst some believe that there may be circumstances under which such a forceps application is justifiable, all are agreed that it is a serious operative procedure, and only to be undertaken under the most favorable auspices.

If, after taking all the conditions into consideration, the practitioner makes up his mind to allow the labor to proceed, and to aid delivery, if necessary, with forceps, it is most important to allow the second stage to be in progress for some time, and to give the head a chance to engage and mould. In a large proportion the labor will terminate naturally. In Little's series 80 per cent. of labors with a moderate degree of contraction of the pelvis delivered themselves spontaneously; in Schauta's 77 per cent.; in Buerger's 76 per cent. The fetal mortality in those cases, as pointed out by Boeninghausen, is about 1.5 per cent. for all types of contraction. Contrast these figures with the statistics of the high forceps operation. Munro Kerr, in a series of 130 cases, gives the fetal mortality as 28 per cent.; Boeninghausen as 44 per cent. Harrar, in 17 cases, had a fetal mortality of 11.7 per cent. These figures are very striking, and form an irrefutable argument against the early application of forceps where there is some degree of disproportion between head and pelvis.

How then ought we to deal with a case where, owing to pelvic contraction, large size of fetal head, malposition, or other cause, the head fails to engage? The first point to observe is the most rigid attention to asepsis, and the limitation of the number of vaginal examinations, for we may have to resort to one of the major operations to effect delivery. With the patient under an anesthetic, a careful examination by the Müller-Kerr method ought to be made. If the head can be pushed down into the brim no great difficulty need be anticipated. If there be only a slight amount of over-lapping a successful termination without

recourse to operation, may be hoped for. If the over-lapping be great, delivery of a living child, either spontaneously or with the aid of forceps, will be impossible. In the latter instance resort should be had to Cesarean section unless there is a likelihood that the patient is infected. In certain cases also pubiotomy may be the operation of choice. If the patient has been frequently examined, and especially if attempts have been made at delivery without the strictest precautions, craniotomy, even on a living child is justified.

When, from the absence of or slight degree of over-lapping, there is reason to suppose that delivery can be effected, the patient ought to be allowed to continue in the second stage for several hours. There should be no arbitrary limit to the duration of the second stage of labor. There can be no question that very considerable harm has been done by much of the teaching in the past that the second stage of labor must not be allowed to extend over a certain number of hours. So long as the mother is not becoming exhausted, the lower uterine segment not thinning out, and the fetal heart not becoming slow, labor may be allowed to proceed. As we have shown, a very large percentage will terminate spontaneously. In others forceps can be applied with ease and safety after the largest diameter of the head has passed the brim, and the head become fixed and moulded in the pelvis. In the flat pelvis this engagement of the head is greatly helped by placing the patient in the Walcher position.

The advantage of allowing the head time to mould and become fixed is well known by a type of case sometimes admitted to our Obstetrical Hospitals. The case where an application of forceps has been made by the practitioner in the patient's home without success. The patient is transported to the hospital; there forceps are again applied, and a fairly easy delivery effected, not because of any special skill on the part of the operator, but simply because further time has been given for the head to mould.

If, after a number of hours, the head fails to engage, a tentative application of forceps may be made. In some cases a moderate amount of traction may bring it down through the brim. No excessive force must be exerted, for it can only result in the death of the child and extensive laceration of the soft parts of the mother. If the circumstances are favorable pubiotomy may be performed; if not, craniotomy is the likely alternative, as Cesarean section under such circumstances may be contra-indicated, owing to the risk of infection.

Let me illustrate what has been said by short accounts of one or two cases we have recently had in the Burnside Obstetrical Hospital.

Mrs. S., aged 33, primipara, was admitted to the hospital on March 11th in labor. The head was presenting in the right occipito-posterior position, and was not fixed in the pelvic brim. The pelvis was well proportioned and of fair size, with an estimated true conjugate of 10 centimetres. On pressing the head down into the pelvis there was a slight amount of over-lapping. The first stage progressed slowly, and morphine and hyoscine were given on three occasions. The cervix was fully dilated at the end of twenty-four hours. After being five hours in the second stage there was no engagement of the head. Forceps were applied, but the head could not be made to advance. The fetal heart, after the application of the forceps, could not be heard, and craniotomy was performed. There was some laceration of the vagina and perineum, and the patient had a febrile puerperium, the temperature rising on several occasions to 101 deg.

H. H., aged 13, primipara, admitted to the hospital. Head presentation, R.O.P. position, head movable above the brim. Pelvis slightly contracted, estimated true conjugate of 9.5 centimetres. First stage completed in fourteen hours. Pains continued strongly in the second stage, but after four hours the head was not fixed, and the patient was somewhat exhausted. Forceps were applied, first before and then after rotation of the occiput to the front, but without success. The fetal heart was still strong, about 130 per minute, and as the patient had been handled very carefully throughout with a view to preventing the possibly of infection Cesarean section might have been undertaken at this stage. Owing to the youth of the patient, and what we knew regarding the paternity of the child, however, we deemed it unjustifiable. Version was performed, and the birth of the child effected by perforation of the after-coming head. This, in my experience, is sometimes an easier operation than perforation of the fore-coming head. There was some laceration of the perineum and vagina, and the puerperium was slightly febrile.

In contrast with these two unfortunate results of forceps application to the head above the brim, let me cite other two of practically the same type, where a happy result was obtained by Cesarean section.

Mrs. B., aged 23, primipara, two weeks overdue. Seen in consultation on account of non-engagement of the head in spite of strong labor pains. Pelvis normal in configuration; true con-

jugate estimated at 11 centimetres. The os was fully dilated, membranes unruptured. The head was large, freely movable above the brim, and overlapped when pressed down. The patient had only been examined once, and that with every precaution, before I saw her. Owing to the degree of over-lapping Cesarean section was advised, although the pelvic measurements did not seem to justify it. The operation was performed, and resulted in the birth of a healthy living child and a perfectly normal puerperium. The head of the child was large and firmly ossified.

Mrs. F., aged 24, primipara. Admitted to the hospital on April 11th in labor. The head was presenting L.O.A. position, freely movable above the brim. Some overlapping on pressing it down into the pelvis. True conjugate estimated at 10. centimetres. No flattening. The first stage progressed normally, and at twelve noon, the os being fully dilated, the membranes were ruptured. After four hour of strong labor pains the head was still unengaged. Having in mind our previous results with high forceps we elected to do Cesarean section. Mother and child both did well. The cause of the non-engagement of the head was at any rate partly due to the cord being coiled round the neck of the child five times, so preventing the descent. Had forceps been applied the death of the child would almost certainly have resulted.

In subsequent labors all of those patients may be delivered naturally, for in none was the amount of pelvic contraction great. It is not only in primiparous patients that we meet with these difficulties at the pelvic brim. They may arise in parous women, who have previously given birth to living children. In them, too, premature application of the forceps may have disastrous results.

Mrs. C., aged 43, 7-para. Seen in consultation on account of failure of the doctor to deliver with forceps. The patient's previous labors had terminated naturally. The pelvic measurements were normal; the true conjugate estimated at 10.5 centimetres. The first stage had lasted nearly forty-eight hours, the head was not fixed, and forceps had been applied for manual dilation of the cervix, but the head could not be made to advance. The patient was admitted to the hospital, and allowed to continue in labor for two hours. Forceps were then applied, although the head was still movable, because of the exhaustion of the patient. No advance could be made. With the amount of handling which this patient had had the only alternative was craniotomy. The hand was introduced into the uterus, with the intention of per-

forming version, to be followed by perforation of the after-coming head, when it was discovered that the uterus was ruptured through the lower segment. The abdomen was opened, the uterus incised, the child removed dead, and hysterectomy performed. The patient had a somewhat stormy convalescence, the temperature ranging around 101 deg. for several days. Ultimately she made a good recovery.

This is a type of case not infrequently met with in practice. The patients are usually elderly and stout. Previous pregnancies and labors have resulted in thinning and weakening of the uterine wall. The first stage is apt to be prolonged, so that the second stage pains are ineffective, and the head fails to engage. Thinning of the lower uterine segment readily occurs if there is the slightest disproportion between head and pelvic brim. So that we cannot allow the second stage to proceed for many hours. We are put off our guard by the previous obstetric history, and think that we shall have no difficulty in effecting delivery with forceps. If we are deceived in this, and find that the head will not engage with moderate traction, recourse should at once be had the craniotomy or Cesarean section if circumstances be favorable.

Mention has not been made of version as an alternative to the application of high forceps, or as a means of treatment when the high forceps operation fails to effect delivery. Our experience with this, in common with that of other obstetricians, is that the fetal mortality is even higher than after the high forceps operation. Harrar reports a fetal mortality of 13.7 per cent. in 51 versions on living children. Taylor, in 260 cases of pelvic deformity, reports an infant mortality of 46.6 per cent. after version, 25 per cent. after high forceps. We have on two occasions known rupture of the uterus to occur as the result of attempted version after high forceps failed.

Let us then try to sum up the situation in those border-line cases where, with a pelvis normal in size or slightly contracted, there is a disproportion between the fetal head and the pelvic brim, and the head has failed to engage at the beginning of the second stage. Immediate application of forceps will result in death of the child in at least one-quarter of the cases, and there will be a maternal mortality of from 1 to 5 per cent., and a morbidity which is difficult to estimate, but which is certainly very high. If the labor be allowed to continue without interference, spontaneous delivery will occur in about 75 or 80 per cent. of the cases, with a fetal mortality of between 1 and 2 per cent. Cesarean section, performed before any attempt has been made

to deliver with forceps, should give a practically negligible fetal mortality, and a maternal mortality of 2 or 3 per cent. The performance of the operation after one tentative application of the instrument, provided this and all previous manipulations have been done with aseptic precautions, gives almost equally good results.

The conclusion is inevitable that in those cases where the disproportion is slight, the best results for mother and child will be obtained by allowing labor to continue until spontaneous delivery occurs, or until the head has entered the pelvic cavity, when forceps may safely be applied. Where the disproportion is greater Cesarean section, performed as early as possible, will give the best results. If spontaneous delivery does not occur, and the head does not enter the brim, one attempt at forceps delivery may be made, but extreme force must not be used. Failure of the head to come through should be followed by Cesarean section, pubiotomy or craniotomy, according to the circumstances of the case.

It ought to be recognized that those are formidable cases to deal with, and the best results can be obtained only if the patient is in a well-equipped hospital, where the practitioner's hand is not forced by the well meant, but unwise, demands of the patient's friends for him to intervene with the object of cutting short her suffering; where he can conduct every manipulation with the strictest asepsis, and where he has facilities for performing instantly any one of the major operations mentioned. Among major operations high forceps ought to be included. Obstetrics is a branch of surgery, and the same care and skill are demanded of the obstetrician as of the surgeon if the best results are to be obtained. If this were more fully recognized by the public and the profession there would result an enormous saving of infant life, a greatly lowered maternal mortality, and a vast diminution in the number of lesions demanding operative treatment at a later stage, and so often resulting in permanent impairment of health and usefulness.

## THERAPEUTIC NOTES

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**Follicular Tonsillitis.**—W. Lapat (*Medical Record*) employs hydrogen peroxide on a cotton applicator to remove the patches. With another applicator he inserts into the crypts a five per cent. solution of tincture of iodine, taking care that none of it flows into the pharynx. Applications are made twice a day on the first two days, and the patient is given an ichthyol spray to use every two hours.

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**Uncomplicated Tuberculous Foci in Bones.**—Huntington (*Annals of Surgery*) thoroughly exposes and clears out the focus, packing the cavity with camphor-phenol gauze. In a few days the amount of packing is reduced and then entirely dispensed with, when the bone cavity remaining may be filled with Beck's paste or the Mosteg-Moorhaf wax. The wound is then closed and fixation secured by a loosely applied plaster-of-paris dressing.

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**Progressive Deafness.**—Grodénigo (*Presse Otol.*) finds a rational basis for the administration of calcium salts as a therapeutic measure, as the deafness of pregnancy and lactation is the result of changes in the thyroid and parathyroids. He employed about three grains of the chloride or lactate of calcium in daily doses, with excellent results. As the hypodermic method frequently leads to abscess formation, it is considered dangerous.

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**Nasal Deformity.**—O. A. Lothrop (*Boston Med. and Surg. Jour.*) removed a strip of bone two inches long and one-twenty-fifth of an inch wide from the free vertebral border of the scapula with cutting forceps and wrapped in wet, sterile gauze. Great care was taken not to denude this strip of bone of its periosteal covering. A subdermal passage-way was made in the nose bridge extending to the distal extremity of the nasal bone. The periosteum was cut and elevated along the crest of the nose bridge up to the frontal bone. The nasal bones were ground down with a rasp and the graft inserted. In three weeks the graft was quite solid; in four weeks it was rigid and the dressing omitted.

**Tuberculous Peritonitis.**—H. Lawrie (*B. M. J.*) has found the following mixture of decided benefit in two serious cases of tuberculous peritonitis: Calci carbonitis precipitate, drs. two; creosote, dr. one-half; mucil. trag., pot. iodidi, of each, grs. fifteen; benzosulphinide grs. eight; olei, menth pip., minims five; aquam ad., ounces eight; two drs. every four hours for a child five years of age.

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**Chronic Leucorrhœa.**—A. H. Curtis (*Surg. Gyn. and Obs.*) urges care of the general health, free elimination, and the treatment of any mild pelvic inflammations present. Treatment of the endometrium can ordinarily be dispensed with. Unusual cases require dilatation for drainage and topical applications. Curettement is probably harmful. Vaccines are beneficial in chronic purulent discharges, some being helped only when these are administered. The treatment which accomplishes the best results consists in the continued use of the autogenous vaccines and dry cleansing of the vagina, and powder applications.

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**Empyema.**—R. de Bovis (*Semaine Médicale*) says the incision must be made as far down on the chest as possible—generally in the ninth intercostal space—encroaching slightly on the dorsal region and not be exclusively lateral. Complete exclusion of air from the cavity is not an actual necessity, and opinions differ as to drainage by aspiration and the “open door” method. De Bovis has tried to do without gauze wisps, tubes, etc., simply applying an external dressing to the pleurotomy wound. In two non-tuberculous cases this was successful. The entrance of germs is hindered by the dressing. The chief requisite is the low incision.

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**Toxemia of Pregnancy.**—Ellice Macdonald (*Med. Rec.*), has treated twelve cases of toxic vomiting of pregnancy by the use of a small rubber tube thrust into the empty stomach after anesthetizing the pharynx. When the tube is down about twenty-two inches, eight ounces of a solution of sodium chloride, slightly stronger than the normal solution, are injected. Then the tube is passed further down to about twenty-eight inches. The patient is now placed upon her right side, in a semiprone posi-

tion, and suction made by a vacuum bottle and syringe to withdraw some of the contents. With a gravity can an injection is then made of a solution of granular sodium sulphite, about four to six grams to a litre. This solution precipitates itself through the intestines and appears at the anus in thirty minutes. Good results have been obtained.

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**Chronic Intestinal Stasis.**—W. A. Bastedo (*J. A. M. A.*) thus sums up the treatment of chronic intestinal stasis: Regularity of defecation, measures to improve intra-abdominal pressure, measures to increase peristaltic activity, and measures to increase the bulk and softness of the colon contents. In the average case attention to the habits of life and to the amount and kind of food, and the administration of a softening agent or a very mild laxative will be effective in overcoming the stasis, and, therefore, the toxemia. In severe cases, the addition of an oil enema at night may work a marvellous change for the better. In these chronic cases the drastic cathartics should be omitted from use. If measures such as those spoken of, when carried out thoroughly, do not overcome the stasis and the toxemia, the question of surgery should be seriously considered.

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**Retrodisplacements of Uterus.**—A. Flint, Jr. (*Am. Jour. Obs. and Dis. Women and Children*) advises treatment to be begun at once when retrodisplacements occur. The results are universally good when the uterus, ligaments, vagina and pelvic floors are still subinvolved, that is, if the condition did not exist prior to pregnancy. Occurring between the second and third week of the puerperium, the treatment should be hot douches, the internal administration of ergot, and the knee-chest posture. Between the fourth and sixth weeks, in addition, tampons of glycerotannin should be used every third or fourth day. Before the end of the sixth week a pessary should not be used. Should the displacement recur and the uterus be larger than normal, a round elastic ring pessary will hold the uterus up comfortably. This should be changed in three or four weeks to the ordinary hard-rubber retroversion pessary. During the wearing of a pessary the patient should assume the knee-chest position for five minutes twice a day, douching once a day.

## Reviews

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*Collec'ed Papers from The Research Laboratory of Parke, Davis and Co., Detroit, Mich.*

This is the second volume of Reprints to issue from Parke, Davis & Co. of the valuable work done in their laboratories. There are many charts and illustrations.

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*Diseases of the Labyrinth.* By ERIC RUTHIN, of the University of Vienna; with a Foreword by PROFESSOR VICTOR URBAUTSCHITSCH. Authorized Translation by HORACE NEWHART, A.B., M.D., Instructor in Otology, University of Minnesota. With 25 Textual Figures. Price, \$2.00. New York: Reiman Company.

Many Americans have followed the clinics of Professor Ruthin in Vienna in days past, and will now be able to possess a monograph in the English language. It embraces the recent progress in the diagnosis and treatment of labyrinthine complications. It will materially help to recognize these conditions.

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*Serology of Nervous and Mental Diseases.* By D. M. KAPLAN, M.D., Director of Clinical and Research Laboratories of the Neurological Institute, New York City. Octavo of 346 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$3.50 net. Sole Canadian agents, The J. F. Hartz Co., Limited, Toronto.

The fact that there was not heretofore any American work covering this subject is the reason for its calling into existence. Neurologists and psychiatrists, as well as those interested specially in these branches of medicine, will appreciate its production.

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*International Clinics.* Volume II. Twenty-fourth Series, 1914. Philadelphia, London, and Montreal: J. B. Lippincott Company.

Six papers on diagnosis and treatment; three on medicine; eleven on surgery; two on obstetrics; one on child welfare, make up this volume. As usual, the volume is profusely illustrated.

*Diseases of Bones and Joints.* By LEONARD W. ELY, M.D., Associate Professor of Surgery, Leland Stanford Junior Univ., San Francisco, Cal. Sextodecimo: 220 pages, 94 illustrations. Surgery Publishing Co., New York. Price, cloth, \$2.00.

This book is intended primarily for the general practitioner, but instead of furnishing that long-suffering and very important person with a mass of details, and with many methods of treatment from which he may choose, the book lays down broad general principles, with the evidence upon which they are based, and then shows how these principles may be applied.

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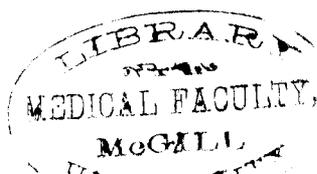
*Guiding Principles in Surgical Practice.* By FREDERICK-EMIL NEEF, B.S., M.L., M.D. Adjunct Prof. of Gynecology, Fordham University School of Med., New York City. Sextodecimo; 180 pages. Surgery Publishing Co., New York. Price, cloth, \$1.50.

The viewpoint of this book is based on clinical studies in the operating-room and at the bedside of the patient. The book covers the practical points in the preparation of the patient for an operation, the arrangement of the operating-room, the important relations between the surgeon and his anesthetist, the assistant, the family physician, the nurse during the course of the operation, also the care of the case.

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*Gas Poisoning in Mining and other Industries.* By JOHN GLAIS-TER, M.D. (Glas.), D.P.H. (Camb.), F.R.S.E., etc., etc., Professor of Forensic Medicine and Public Health in the University of Glasgow, etc.; and DAVID DALE LOGAN, M.D. (Glas.), D.P.H., Surgeon to the Coltness Iron Works. With Plans, Colored Plates, and Thirty-six other Illustrations. Edinburgh: E. and S. Livingstone.

This is another example of the timely literature of the day with which medical men in Canada will do well to provide themselves. It is comprehensive, and goes thoroughly into all phases of gas poisoning, particularly that from carbon monoxide. While the subject has been treated of from time to time in various papers and monographs, this book gathers together all the valuable knowledge extant upon the subject. That both authors have considerable practical experience with their subject adds materially to the value of their production.



*A Treatise on Clinical Medicine.* By WILLIAM HANNA THOMSON, M.D., LL.D., formerly Professor of Practice of Medicine and of Diseases of the Nervous System in the New York University Medical College; Ex-President of the New York Academy of Medicine, etc. Octavo volume of 667 pages. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$5.00. Half-morocco, \$6.50. Sole Canadian agents, The J. F. Hartz Co., Limited, Toronto.

Reading this book, one is struck by the fact that the writer has been a very careful observer. There are many exceedingly practical points of the utmost value in determining diagnoses. The other striking characteristic is the authoritative pronouncements upon treatment. There are no long lists of various remedies to choose from, but a concise statement of what the author has found best in each condition. This stamps individuality upon the book. No book of recent production on medicine has so pleased the reviewer from the viewpoint of practicability. If every one finds Professor Thomson's prescriptions as applicable and fitting as he has apparently done, there should be added success in every man's practice.

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*The Occupational Diseases: Their Causation, Symptoms, Treatment and Prevention.* By W. GILMAN THOMPSON, M.D., Professor of Medicine, Cornell University College, New York City; Visiting Physician to Belleville Hospital. Illustrated. New York and London: D. Appleton and Company.

In Canada, the enactment of the workmen's compensation legislation in Ontario, and the likelihood of similar legislation following in the other provinces, marks a new departure in medicine. Diseases, in many instances, will more and more become to be looked at from the standpoint of the occupation.

While there have been several books published upon these and kindred subjects, not in America, as yet, has any medical literature been issued upon these subjects. Therefore, medical men will welcome this new book by Professor Thompson, who has long been identified with this class of diseases. From his practical experience it was to have been expected that a good book would emanate. It is exceedingly well-arranged, strikingly illustrated, and the subject matter clearly set forth. The whole subject is gone into in a systematic manner, and our readers may be assured they are getting the best there is on the market.

# Dominion Medical Monthly

And Ontario Medical Journal

EDITED BY

**Medicine:** Graham Chambers, R. J. Dwyer, Goldwin Howland, Geo. W. Ross, Wm. D. Young.

**Surgery:** Walter McKeown, Herbert A. Bruce, W. J. O. Malloch, Wallace A. Scott, George Ewart Wilson.

**Obstetrics:** Arthur C. Hendrick.

**Pathology and Public Health:** John A. Amyot, Chas. J. C. O. Hastings, O. R. Mabee, Geo. Nasmyth.

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**Gynecology:** F. W. Marlow, W. B. Hendry.

**Genito-Urinary Surgery:** T. B. Richardson, W. Warner Jones.

**Anesthetics:** Samuel Johnston.

GEORGE ELLIOTT, MANAGING EDITOR.

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No. 4

## COMMENT FROM MONTH TO MONTH

The Ontario Territorial Elections to the Medical Council are to take place on the first day of December, and nominations are to be received up to the 13th day of November.

Whilst in no wise wishing to make these political, it would seem to be very important that, where any changes in representation are contemplated, prominent medical men in close touch with the powers that be, should be invariably elected.

Within the lifetime of the next Medical Council important changes will, no doubt, be enacted in the laws governing the practice of medicine in this province, and there is need for the best possible representatives on the Council.

It is to be hoped that a strong, able, and active body will be elected to press for those reforms so urgently needed.

**Preventive Medicine** will take a foremost part in the present great European war.

The fact that the Imperial authorities have called upon Sir William Osler to sound a clarion warning is significant.

It is significant, too, that the great overwhelming, preponderating good sense of the state places the responsibility for the prevention of disease and the care of the wounded upon regular scientific medicine. The people should take it well to heart that much is anticipated and will be got from that profession. The quacks have not been called into service.

Dysentery, diarrhea, typhoid, pneumonia are the quartette to be combated. The people can thank scientific medicine that the European armies are well-protected against smallpox; and malaria, too, will be well looked after.

There will be every effort put forth by scientific medicine that mortality and morbidity in the armies will be due to the legitimate results—the killing and wounding by weapons—rather than by diseases.

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**Gonorrhoea.**—A new treatment of gonorrhoea is put forward by Dr. Mulot, Paris, France. It is a mixture of tincture of iodine and sterilized oil (5-100). At the first injection, which should be maintained in the urethra for five minutes, there is a little pain, but this gradually disappears as the injections are repeated. It is claimed the running ceases in from two to three days and that at the end of a week the cure seems complete. The injections are given three times a day for the first two or three days, then one is given in the middle of the day, and in the morning and again in the evening an astringent injection of sulphophenate of zinc or some other astringent.

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**Third Stage of Labor.**—T. Ahlfeld (*Zeits. für Geburts. and Gyn.*), compares statistics at European maternities with those at Marburg, and states the advantage is with the expectant treatment. After delivery the first fifteen minutes belong to the woman alone; during the second fifteen minutes the mother and child can be supervised. After this the mother should be inspected every five minutes and fresh linen placed on the vulva each time. The placenta will become detached sooner and more completely the less the uterus is manipulated after the expulsion of the child. An hour and a half or two hours should be allowed to pass before any attempt is made to remove the placenta. By this time it should be lying low down in the vagina. Slight pressure from without will then readily expel it. Inspection every five minutes guards against any surprise in hemorrhage.

## Editorial Notes

### ONTARIO MEDICAL ASSOCIATION

The next meeting of the Ontario Medical Association will be held in Peterborough in May, 1915. Arrangements are now being made to have this annual meeting in conjunction with the Medical Health Officers' Association, so that the attendance will be large and members will be sure of reduced fares on the railroads. The following is a list of the committees:—

President, D. J. Gibb Wishart, Toronto.

#### COMMITTEES.

*Arrangements.*—T. W. H. Young, Chairman; N. H. Sutton, Secretary; J. H. Eastwood, D. C. King, B. E. Kelly, all of Peterborough; R. H. Bonnycastle, Campbellford; H. A. Turner, Millbrook; W. A. Ross, Barrie; J. Holderoft, Havelock, and W. G. Collison, Lindsay.

*Papers and Business.*—H. J. Hamilton, Toronto, Chairman; G. S. Cameron, Peterboro, Vice-Chairman; Geo. B. Strathy, Toronto, Secretary; A. W. McPherson, Peterboro, Local Secretary; T. N. Greer, J. A. Morgan, J. V. Gallivan, J. M. McCulloch, and D. N. Carmichael, all of Peterboro, and the Chairmen and Secretaries of the Sections, as follows:—

*Surgery.*—C. L. Starr, Toronto, Chairman; F. P. McNulty, Peterboro, Local Chairman; A. Moorehead, Toronto, Secretary; E. V. Frederick, Peterboro, Local Secretary.

*Medicine.*—A. R. Gordon, Toronto, Chairman; F. C. Neal, Peterboro, Local Chairman; Geo. S. Strathy, Toronto, Secretary; L. S. Hammond, Peterboro, Local Secretary.

*Obstetrics and Gynecology.*—W. D. Scott, Peterboro, Chairman; A. Moir, Peterboro, Secretary.

*Eye, Ear, Throat and Nose.*—N. D. Buchanan, Peterboro, Chairman; W. W. McKinley, Port Hope, Secretary; General Secretary, F. Arnold Clarkson, 421 Bloor St. W., Toronto; Local Secretary, J. B. Mann, Peterboro.

*Credentials.*—W. K. Colbeck, Welland, Chairman; J. W. S. McCullough, Toronto; S. H. McCoy, Toronto; T. N. Greer, Peterboro; A. H. Hore, Markham; D. N. Carmichael, Peterboro.

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*Publication.*—W. A. Young, Toronto, Chairman; J. Ferguson, Toronto; J. T. Fotheringham, Toronto; R. W. Powell, Ottawa.

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*Ethics.*—J. L. Bradley, Creemore, Chairman; J. D. Ivey, Cobourg; E. T. Kellam, Niagara Falls; S. Johnston, Toronto; C. H. Bird, Gananoque; W. T. Parke, Woodstock; D. S. Hoig, Oshawa.

*Executive.*—The President, Secretary and Treasurer ex-officio; G. S. Cameron, Peterboro; R. R. Wallace, Hamilton.

*Necrology.*—J. H. Elliott, Toronto, Chairman; W. H. Cameron, Conniston; Lorne Robertson, Stratford.

*Audit.*—J. A. Amyot, Toronto, Chairman; G. Boyd, Toronto; J. M. Rogers, Ingersoll; E. E. Harvey, Norwich; A. McKinnon, Guelph; C. Meyers, Toronto; F. N. G. Starr, Toronto; R. J. Wilson, Toronto; D. E. Mundell, Kingston; F. Williams, Bracebridge.

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### CANADIAN PHYSICIANS AT VALCARTIER

Those of Toronto who have already given up their incomes and means of livelihood at the call of duty are as follows:

Lt.-Col. D. W. McPherson, D.A.D.M.S., 2nd Div.

No. X. Field Ambulance—O.C., Major W. B. Hendry, Lieuts. H. L. Jackes and A. S. Lawson.

No. XI. Field Ambulance—O.C., Major C. J. Currie, Major E. B. Hardy. Captains H. R. Holme, J. H. Wood, W. L. C. McBeth and H. Orr.

No. XIII. Cavalry Field Ambulance—O.C., Major Wallace Scott, and Captains R. S. Pentecost, G. R. Philp and N. J. L. Yellowlees, and Lieut. W. T. H. McLean.

From Hamilton—Nos. XII. and XIX. Field Ambulances will come under command respectively of Major G. D. Farmer and Major J. E. Davey.

From London—No. XV. Field Ambulance—O.C., Major E. G. Davis.

From Sarnia—No. XIV. Field Ambulance—O.C., Major D. B. Bentley.

No. 1 Field Ambulance proceeded to Valcartier on the 31st August, in command of Lt.-Colonel D. W. McPherson, with the following officers: Major W. Scott, Capt. P. K. Menzies, Capt. J. C. Calhoun, Capt. P. G. Brown, Capt. G. Hyland, Capt. W. H. Fox, Lieut. T. H. McKillip, Lieut. H. B. Jeffs, Lieut. O. J. C. Withrow. Number of rank and file, 199.

On the above date No. 1 Clearing Hospital also proceeded to Valcartier, the officers being Capt. C. E. Cole and Capt. G. W. O. Dowsley. Number of rank and file, 40.

On the 6th September No. 1 Stationary Hospital proceeded to Valcartier, in command of Major D. B. Bentley, with the following officers: Capt. W. H. Tytler, Capt. W. Bethune, Capt. J. J. Fraser, Capt. W. A. Burgess, Capt. S. Ellis, Lieut. J. N. Stewart, Lieut. F. S. Ruttan, Lieut. G. Stewart. Number of rank and file, 130.

On the above date the No. 1 General Hospital also proceeded to Valcartier in command of Major E. B. Hardy, with the following officers: Capt. R. H. Nicholls, Q.M., Capt. R. S. Pentecost, Capt. G. R. Philp, Capt. W. L. C. McBeth, Capt. J. H. Wood, Lieut. F. S. Burke, Lieut. G. C. Gliddon. Number of rank and file, 111.

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### McGILL GRADUATES AND THE WAR SITUATION

The following letter has been sent to every McGill graduate:

At a time like the present, when the destiny of the Empire is at stake, McGill University and its graduates should come forward and do everything in their power to help the common cause. The individual graduate probably does not fully realize the influence the graduates as a whole have in Canadian affairs. Over 5,000 educated men, holding important positions all over the Dominion and elsewhere, are a tremendous power and influence, particularly if their efforts are concentrated on certain fixed objects.

It was felt by the Executive of the Graduates' Society and by the Committee in charge of the Reunion, which it had been proposed to hold in the Fall of 1915, that in the present crisis in the Empire, something should be done; and it was decided to write a letter to every graduate asking him to use all his influence towards patriotic ends.

In order to make our influence felt in a definite way it was thought that a fund should be started to which *every* graduate

of the university should contribute. The contribution of each individual would be for the nominal amount of *One Dollar*, which would represent his patriotic vote and the signification of his intention to do everything possible to assist Canada in the responsibility and duty created by the war.

The vote of the McGill graduates will be deposited in cash form to the credit of the Canadian National Patriotic Fund.

You are therefore invited to fill in and return the accompanying cheque form, which will be cashed at par, or to enclose one dollar in some other form.

An immediate response is necessary if this action is to have all the effect that is hoped for from it.

For the Executive.

JOHN L. TODD,

President.

WILLIAM STEWART,

Secretary.

It may be that some letters have not reached their destination. Remittances should be addressed to Mr. Geo. C. McDonald, 179 St. James Street, Montreal.

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### **A HUMAN SKELETON ONE HUNDRED AND FIFTY THOUSAND YEARS OLD**

Dr. Hans Reck, of Berlin, has discovered, at Oldoway, in the north of German East Africa, the skeleton of a man who lived, in all probability, some 150,000 years ago. The photographs reproduced were supplied by the doctor to the *Illustrated London News* and were accompanied by a note to the editor of that weekly. The following translation is from the German:

The rare animal fossils of the Tertiary Period yielded by Africa decided the Geological-Palaeontological Institute and Museum of the University of Berlin to excavate the Oldoway "pit." In three months, some 1,700 bones were found and taken to the expedition's camp, there to be sheltered carefully under primitive, straw-roofed huts until they could be numbered, classified, and packed for their long journey. The huts in question were full of bones and huge relics of elephants. Most of the tusks discovered were surprisingly long, very light, and straight. The

best was 3.8 meters (10 feet 5 inches) in length. Then there were represented the rhinoceros, the hippopotamus, numerous antelopes and gazelles, as well as pigs, rodents, and beasts of prey.

It was frequently difficult to obtain the bones. Not only was there a dearth of water and a blazing sun, but wild animals would arrive unexpectedly and disturb the diggers. Rhinoceroses, in particular, chased the men from time to time, sending them running through the trees and holding them prisoners for hours. The crumbling walls of the pit provided another obstacle. A precious relic would be seen in about the middle of the 50-foot wall, and those seeking it would have to be lowered by ropes, or rude ladders would have to be made, and so set that the "find" could be reached. When, by good fortune, a place was found upon which a man could stand, the task was easier, for the natural "platform" could be enlarged by the pick.

One day brought with it a great surprise. On the steep incline of the "pit," the excavators found signs of a human skeleton, which was soon laid bare and protected by a straw roof. The discovery was seen to be of extreme age, and in a remarkably fine condition. The stratum about it was undisturbed, proof that it owed its position not to having been buried at the bottom of a hole dug down through several strata, but to having been contemporaneous with the stratum in which it rested. And that stratum is so old geologically that the skeleton must date at least from the Diluvial Period of Africa, which, it may be noted, synchronizes with the Ice Period of Northern Europe. No more precise date can be assigned to it until it has been compared with fossils found during the same excavations. It is typically negroid, and the first fossil human form found at Oldoway. The skull is highly developed, narrow and long; the head is set deep in the shoulders; the chest is massive. The position of the skeleton calls for notice. The legs were drawn up sharply, and obviously in a natural manner. This is additional argument in favor of the belief that the body was not buried; and must be taken in conjunction also with the facts that there are no traces of entombment, and that the contorted attitude is unknown in any case of burial by man. It would seem that the man was driven into the lake, which was once above the spot on which his remains were found, or met with an accident on it, and was drowned. The body would be quickly covered with the mud at the bottom of the water and tufa, and so be protected from disturbing influences.—*Scientific American.*

**BABY SAVING CAMPAIGN ACHIEVES SPLENDID RESULTS**

(Toronto Health Bulletin.)

The Baby Saving Campaign organized this past summer by the department has certainly justified itself. During the three summer months, June, July and August, there were 200 less infant deaths than in the same months last year.

The death rate from infant diarrhea, the most deadly and at the same time the most preventable disease of infancy, has this summer been cut in half.

The work of the Division of Child Hygiene has during the past three months been confined very largely to the care of the babies. Ten baby clinics have been at work throughout the summer, at each of which doctors and nurses have been in attendance twice a week. The attendance at these clinics has doubled itself each month, and the total attendance now is 952. 2,318 babies have been taken out on the steamer *Island Queen*, which was used in connection with the department in an effort to save babies from the prostration of the summer's heat.

A pamphlet, "The Care of the Baby," has been prepared, and also translated into Hebrew and Italian. A copy is sent to every mother on the birth of her child, or free on application to the department.

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**DRUGS AND THE WAR**

The drug trade will suffer perhaps more than any other as a result of the European war. Drugs chiefly affected in price so far are quinine, cod liver oil, hyoseyamus, salvarsan, morphine, opium, aconite, essential oils, ergot, phenol, glycerine, digitalis, buchu, physostigmine, camphor, pilocarpine, senna, rhubarb, cantharides, atropine, homatropine, asafetida, aloes, tartaric acid, strychnine, cocaine, novocaine, and the other local anesthetics, formaldehyde, caffeine, theobromine, bichloride of mercury and the synthetic drugs. The United States is a small drug producer, hence is bound to suffer because of the interruption of trade caused by the war. The increased demand abroad for chloroform and ether will affect the prices of these drugs also. The war ought certainly to result in a tremendous stimulation to domestic drug production. A country which is so great a user of drugs ought not to depend to the extent it does upon foreign producers. While it is true that we are absolutely dependent upon Europe for certain drugs, this cannot be affirmed of all that we

import. And probably for our absolute dependence in the case of some drugs it would be possible to substitute relative independence. As regards cinchona, why should we not transfer our trade directly to South America, instead of dealing with London and Amsterdam? There is enough digitalis growing wild in Oregon and Washington to supply the world.—*Medical Times*.

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### RECONSTRUCTION OF THE KIEL CANAL

In 1895, after eight years of hard work, the great canal running from the mouth of the Elbe, in the North Sea, to the Fjord of Kiel in the Baltic, a distance of about sixty miles, was thrown open to commerce. It had a normal width of 72 feet at the bottom and 220 at the water level, with a depth of 29½ feet. Although a sea-level canal, twin locks were built at each end, those at the western entrance to take care of the large tide variations, and those at the eastern end to take care of variations of water level, in the practically tideless Baltic, due to gales. The locks were 492 feet long, 82 feet wide, and 32 feet deep. The locks at Kiel remained open most of the time, while those at the mouth of the Elbe did not need to be used at certain tides.

The canal proved wonderfully valuable to commerce, because it saved the long, hazardous trip around the stormy coasts of Denmark. But its strategic value to the German navy was of even greater importance, as has been demonstrated in the present war.

Although the locks, when built, were large enough to take almost all vessels, they were outgrown in time, even by warships, and finally it was decided to reconstruct the canal, making it broader and providing locks that could take the largest vessel afloat, with plenty of room to spare. This work was completed in time to be of incalculable value to Germany in the present war.

The normal width of the canal is now 335 feet at the surface and 144 at the bottom, with a depth of 36 feet. New twin locks have been built alongside the old ones at each end. They have an available length of 1,082.6 feet and width of 147.6 feet. Intermediate gates may be used to cut off a chamber 328 feet long. The locks at Panama, it will be recalled, are only 1,000 feet long by 110 feet wide.

The work of reconstructing the canal cost \$55,000,000.—*Sc. Am.*

## News Items

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Dr. George W. Ross has arrived in Toronto from Europe.

Dr. Murray Maclaren, St. John, N.B., has gone with Canada's First Contingent as surgeon.

Dr. H. C. Wetmore, St. John, N.B., has been appointed deputy-receiver-general at the port of St. John.

Hon. Dr. Beland, who has been serving with the Belgians, will become attached to the First Canadian Contingent.

Dr. Robert Rudolf, Toronto, has been called to England in an advisory capacity in connection with base hospital work.

Dr. W. E. Deeks, late of Panama, is in Montreal, and has become engaged in examining recruits for the British army.

Dr. George W. Badgerow, London, England, who has been spending some weeks at his parents' home in Toronto, has returned to London.

Sir Thomas Roddick, who has returned to Montreal, after an exciting escape from Europe, was attacked with pneumonia, from which he is rapidly recovering.

Colonel Carleton Jones, director of the Canadian Army Medical Service, left with the First Canadian Contingent, in command of the hospital and ambulance sections.

Dr. Campbell Keenan, Montreal, has accepted the position of regimental surgeon to the Princess Patricia's Light Infantry. Dr. Keenan served with the Strathcona Horse in South Africa.

The total registrations in the Province of Ontario in 1913 was 125,831; the births were 64,561; marriages, 26,998; deaths, 34,317. The net natural gain in population was about 30,000.

Dr. R. A. Reeve has resigned as Professor of Ophthalmology in the University of Toronto and Dr. J. M. McCallum has been appointed to the vacancy. Dr. George R. McDonagh has also resigned and Dr. D. J. Gibb Wishart has been appointed Professor of Oto-Laryngology.

Dr. J. B. Leathes, Professor of Pathologic Chemistry in the University of Toronto, has resigned and will return to England, where he has been appointed Professor of Physiology in the University of Sheffield. Dr. Leathes will remain at the university until December.

At the recent meeting of the health officers of Nova Scotia, Dr. W. H. Hattie, provincial officer of health for Nova Scotia, presided, and amongst others present to deliver addresses were Drs. J. W. S. McCullough, of the Ontario Board of Health, and Peter H. Bryce, Ottawa.

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## Obituary

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### BRUCE L. RIORDAN, M.D., TORONTO

Dr. Bruce L. Riordan died in Toronto on the 29th of August, in his fifty-fifth year. When it began to be known among his confreres in the city on Sunday following his death Saturday evening there were expressions of the most sincere regret that "Riordan" was dead. The late Dr. Riordan was in many ways associated with all that was best in the profession of medicine. He was strict for his professional rights, and never failed to respect the rights of others. As an organizer of medical society meetings he was a past-master. It is doubtful if any other medical man in Canada could carry out the details for success at a medical meeting so well as Riordan. It was often that his services were required and he was never known to fail. He was happiest when looking after the arrangements for a large or small medical meeting.

But it was not alone in the social life of the profession that he was a leader. As an emergent and traumatic surgeon his experience was large and his understanding unlimited. He was a past president of the American Association of Railway Surgeons, and at the time of his death president of the Aesculapian Club. For the Ontario Division of the Grand Trunk Railway he was surgeon for many years. This often brought him into the courts as a witness, where it is said he always acquitted himself with fairness, honesty and capability.

To the widow and surviving son we extend our sincere sympathy.

## Publisher's Department

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**A MOUTH WASH IN FEVER CASES.**—In all fever cases where the tongue is coated, the lips dry and cracked and the teeth covered with *sordes*, the use of some cooling and soothing mouth wash would seem to be indicated.

Glyco-Thymoline in a 25 per cent. solution with cold water fills this want perfectly. Its frequent use is grateful to the patient and at the same time a great factor in relieving the condition.

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**SYRUP SODIUM BIPHOSPHATE.**—Sodium Acid Phosphate.—*Sodii Phosphas Acidi*. Sodium Dihydrogen Phosphate.—Monosodium Orthophosphate.—Primary Sodium Phosphate.—Sodium Acid Phosphate,  $\text{NaH}_2\text{PO}_4, \text{H}_2\text{O}$ , is the monosodium dihydrogen salt of orthophosphoric acid  $\text{H}_3\text{PO}_4$ , containing not less than 82 per cent of anhydrous sodium acid phosphate.

*Actions and Uses.*—Sodium Acid Phosphate undergoes no change in the stomach. In the intestine it is converted into disodium hydrogen phosphate (secondary or neutral sodium phosphate). In large doses it produces laxative effects similar to those produced by the official disodium hydrogen phosphate (sodium phosphate B.P.). The neutralization of the acid phosphate is accomplished by alkali drawn from the blood. This tends to reduce the alkalinity of the system, which reduction is prevented by the excretion of acid in the urine. Sodium acid phosphate can thus be used to render the urine acid, or increase its acidity. It is used for this purpose to assist the action of Urotropin which is effective only in acid urine. For this purpose sodium acid phosphate should be given long enough before the Urotropin so that it may have left the stomach before the latter remedy enters it.

We have prepared and offer for dispensing in 8 oz. plain bottles Syrup Sodium Biphosphate "Frosst," containing 10 grs. Sodium Biphosphate to each fluid drachm. This palatable product is readily administered in doses of one to two fluid drachms in water repeated frequently until the urine becomes acid. It should not be prescribed in solution with Urotropin.—*Charles E. Frosst and Co., Montreal.*