

Dominion Medical Monthly

And Ontario Medical Journal

VOL. XXXIV.

TORONTO, MAY, 1910.

No. 5.

Original Articles

SIMPLE METHODS, AND CARE IN THE USE OF GENERAL ANAESTHETICS.*

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In selecting this title, I do so because of the lack of opportunity that many well-qualified practitioners have in familiarizing themselves with the giving of anaesthetics.

At this date in the history of medicine and surgery, an apology is scarcely needed in urging that a scientific and more detailed knowledge in the giving of anaesthetics is necessary.

It is a lamentable fact that this branch in the greater practice of medicine has been very sadly neglected, and I believe, because of it, many fatalities, not the greater number of which has been recorded, can be traced directly to an overdose of the anaesthetic proving fatal on the table, or the choice of the wrong drug for that particular case, or, perhaps, the improper administration of the narcotic, which may result fatally, either on the table or subsequently.

Or again, if a fatal result does not occur, the health of the patient may be, more or less, permanently impaired. Many patients have told me from time to time that they have never been the same since they had an operation, although as far as could be seen the result of the operation had left nothing to be desired; but these patients will say that they "take weak or dizzy spells," and it will be found that sometimes they have slight attacks of jaundice or albuminuria. On inquiry, I have found the history something like

*Read before the Welland County Medical Society, April 23rd, 1910.

this: following the operation persistent nausea and vomiting for days, and sometimes even for weeks, with consequent general debility.

Such cases as these I have known to occur after comparatively slight operations, where one could not honestly attribute the condition to any after-effect of the operation.

I have learned, in such cases, the patient was either kept too profoundly under or else subjected to incomplete alternating with too profound anaesthesia, or, perhaps, too long a time being taken in the induction period.

The probable cause of this condition is too much of the drug, with a consequent result of some organic change in the heart muscle, liver or kidneys. Time will not permit me to go into the pathology of this condition, as it is a practical paper I want to give you on how to properly use the different drugs for producing anaesthesia.

If you will permit me, Mr. President, I will speak of the different drugs in common use, and how they should be administered.

We may take it as an axiom that all drugs used for producing surgical anaesthesia are poisons.

The least toxic of these I have found to be *nitrous oxide combined with oxygen*.

The administration of this anaesthetic in prolonged operations is difficult, as it requires a great deal of practice and skill to maintain smooth and satisfactory anaesthesia. This combination, so far, is not practicable except in institutions and large centres, as the apparatus is cumbersome, and the large supply of nitrous oxide and oxygen required is sometimes hard to get.

I have been using this combination more or less for the past three years, when it seemed that any other anaesthetic was out of the question, in such conditions as diabetes, marked kidney disease, very low percentage of haemoglobin, and marked anaemia of any kind, with very satisfactory results. Sometimes these administrations lasted for almost three hours in such operations as hysterectomies, appendectomies, mastoids, etc. The cost of the gases at present precludes the possibility of its taking the place of ether.

Ethyl Chloride.—I have been using this drug a great deal in short operations, such as opening abscesses, removal of adenoids and tonsils, setting fractures, reducing dislocations, etc., also as a preliminary to ether, when nitrous oxide is not convenient, and always preceding ether with children. It is a nice anaesthetic to use in your office.

The method I use in giving this anaesthetic is by spraying or dropping it on the ordinary mask, folding a towel loosely cone-shaped around it, with a small opening at the apex of the cone, through which I drop the anaesthetic. By pressing gently on the stopcock and allowing the spray to strike against the valve a drop is formed. I prefer dropping it on the mask, rather than spraying it, for if there is not sufficient gauze covering the mask, it is liable to spray through on the face, much to the discomfort of the patient. This method of giving ethyl chloride has many advantages over the closed method. There is no asphyxiation, no spasm, which so often happens when the closed method is used, the anaesthesia is longer, and can be prolonged for an indefinite length of time by continuing to drop it on the mask. I have kept patients under this anaesthetic from 45 to 60 minutes, the chief objection being that it takes a great deal more of the ethyl chloride than by the old method.

I think when this method of administration of ethyl chloride becomes more generally adopted, the comparatively high mortality recorded will be much lowered.

Somnoform can be used in the same way. It is a mixture consisting of sixty parts ethyl chloride, thirty-five parts methyl chloride and five parts ethyl bromide. It has a disagreeable odor, and a tendency to decomposition, and thus precludes any advantage over ethyl chloride. My experience is that there is a little more depression with somnoform than with ethyl chloride.

Ether is the most generally used anaesthetic, particularly in hospital practice, and is the drug I would urge every practitioner to familiarize himself with, on account of its safety as compared with chloroform. There is a general prejudice against ether in certain cases, such as nephritis, pulmonary affections, and also in brain surgery. But, I find that giving it by the open method, there are very few cases in which it is contra-indicated.

In acute nephritis, I have seen as much trouble after pure chloroform as with ether when given by the open method, and, honestly, I have seen very little trouble with either. In these cases, if I cannot use nitrous oxide and oxygen, I give a mixture of chloroform and ether, and have never yet had any untoward results.

Ether is contra-indicated in acute bronchitis. With this condition present, I give a mixture of chloroform and ether; but if this irritates I use a little chloroform to put the patient under, and then continue with chloroform and ether.

In chronic bronchitis, in all stages of pulmonary tuberculosis, and in empyaema, if I do not use nitrous oxide and oxygen, I begin

with a mixture of chloroform and ether, and sustain anaesthesia with pure ether.

In operations on the brain, I use ether from the beginning, notwithstanding the fact that so many brain surgeons object, holding that this anaesthetic causes hypercongestion of the cerebral vessels; but this objection only holds good when the old-fashioned closed method is used. When ether is given by the open method there is so little difference between its action on the cerebral vessels and that of chloroform that for this reason it certainly is not contra-indicated; besides, the patients do so much better after the operation when ether is given that this alone would be a positive reason to use it in such serious operations. I have never had any surgeon object to ether in these brain cases.

The old method of giving ether, *viz.*, the closed, which has been so much used both in Great Britain and America, is, I think, a thing of the past. In the first place, it is insanitary, the patient breathing and re-breathing his own respired air. The anaesthesia is then not purely a result of the inhalation of the ether, but partially asphyxial.

The majority of patients secrete a great deal of mucus, caused by the hypercongestion due to the limited supply of oxygen. This mucus very often causes a filling up of the bronchi, and often results afterwards in pulmonary oedema. This mucus, particularly that coming from the nasal passages, is often infective, and may produce pneumonia. A great deal of mucus is swallowed during the initial stage of anaesthesia, and being laden with the vapor, acting as an irritant in the stomach, causes a great deal of after-sickness. The congestion of the vessels about the head and neck, and, indeed, the stasis in the whole venous system, produces stertor and tumultuous breathing, which so often handicaps the surgeon, especially in abdominal operations, and causes a great deal of after-headache.

After a little practice with the open method, the administrator is able to produce a smooth anaesthesia, with little or no discomfort to the patient, no extra secretion of mucus, and no venosity; but he has tranquil breathing, and the surgeon is able to do his work with greater facility and ease. The after-effects are infinitely less distressing, with no headache and very little nausea.

My method of administering this drug is very simple. I take the ordinary mask covered with six or eight layers of gauze—I use the gauze in preference to lint, as the air passes more freely through it—I begin by holding the mask about four inches away from the face, and drop the ether on it. The vapor being heavier than air,

flows down over the face well diluted with air. In a few seconds the patient becomes accustomed to the vapor, when I gradually bring the mask down until it has reached the face, dropping on as much ether as the patient will tolerate. The dropping must be constant and increasing in amount. After a minute or so with the mask thus on the face, I take a square towel, and fold it diagonally, having then a three-cornered towel doubled. I place the apex over the chin, and fold the towel around the mask, the vapor being retained in the space between the mask and the towel, before inhalation. By this method surgical anaesthesia should be produced in from four to ten minutes.

After anaesthesia is produced, with many patients more of the mask may be exposed, and, in the majority of cases, the towel may be dispensed with altogether. The amount of ether used is a little in excess of what one may use by the closed method, but so little that it is scarcely worth considering, and, further, it will be found that, with more practice, less of the drug will be used.

Next we will consider the administration of *chloroform*.

Many very ingenious appliances have been devised from time to time for the administration of this drug, whereby the percentage inspired has approximately been reckoned. I have used the Vernon-Harcourt inhaler with a degree of satisfaction, and, I think, with a little practice, one can administer chloroform with greater safety to the patient, as it is not possible to give as much of the drug as it is by the drop method. I am free to admit, however, that I am old-fashioned enough to imagine that an intelligent administration with the mask and the drop bottle will prove more satisfactory for general use than any appliance that has yet been devised. For it is neither altogether the amount of the anaesthetic that is administered which has to be considered, nor is it well that the attention be taken up in watching the working of valves, and the other mechanism of the appliance, but it is at all times the condition of the patient and the effect produced by the drug that must occupy the administrator's entire attention. Moreover, a very small percentage of the physicians who are called upon from time to time to administer chloroform can or will have any such appliance with them, or, if such should be handed to them, would in many instances be able to use them satisfactorily.

Now, the question is, is it worth while in teaching students how to administer anaesthetics, to train them in the use of these appliances; or is it worth your while, as medical men, when giving an anaesthetic, to direct your attention to the workings of a machine, rather than the changing condition of the patient?

In administering chloroform, I use the same kind of a mask without the towel in the same position as with ether, but not at any time allowing it to rest on the face, so that as much air as possible will mix with the chloroform vapor before it is inhaled. Chloroform vapor, being heavier than air or ether, will flow over the face, and more be inhaled without causing a deleterious effect, as it would if the mask were fitted closely to the face with much less anaesthetic given without admixture of air. I do not mean that I do not approach the face with the mask, as the patient becomes accustomed to the drug, but rather to make it the rule to keep it a little away from the face. If, after the patient is anaesthetised, as little of the drug as possible is given to produce the degree of anaesthesia required, and the patient kept evenly under the influence of the anaesthetic; it will be the exception rather than the rule to have much after-sickness.

Chloroform alone is not nearly so much used now as formerly, its use being largely superseded by that of the C. E. mixture, consisting of one of chloroform, and two of ether by volume. This mixture I have used a great deal, and I consider it safer than pure chloroform in the hands of one not skilled. More of this anaesthetic is required, but after administering it two or three times, it will be found quite as easy to get and keep the patient properly anaesthetised as with chloroform.

Before concluding this paper I would like to say a word or two about the *preparation* of the patient prior to the administration of an anaesthetic, and also the after-treatment. I have invariably found that the proper care of a patient before the taking of an anaesthetic helps to minimize distress and danger afterwards.

If sufficient time can be given, it is better to have the alimentary canal thoroughly cleansed at least twenty-four hours prior to the operation, and after this has been effectively done, light, nutritious and easily assimilated diet given at intervals up to five or six hours before the operation. Two or three hours before the administration a simple enema should be given. If the patient is weak, and feeling the need of some food, a cup of weak tea or coffee with little or no milk may be given. If this is not desirable, a little beef broth free from fat, or a nutrient enema may be given within two hours of the anaesthetic.

With regard to the care of the patient subsequent to the operation, I might say that I very often wash the stomach, before the patient has left the table and recovered consciousness, with a weak solution of lime water or bicarbonate of soda. I invariably do this in cases of general peritonitis, relieving the stomach of any irritating matter that might be conducive to vomiting or peristalsis.

In cases where this is not done, and the patient is suffering from thirst or nausea, I recommend the giving of copious draughts of hot water, sometimes with a little bicarbonate of soda dissolved in it; if there is retching this may be immediately vomited, but I do not hesitate to repeat the treatment, even though it may again come up, for in the majority of cases, if it does not totally alleviate the distress, it gives the patient great relief. Should vomiting persist, a little dry champagne and water is very often found to relieve the condition.

In spite of this and any other treatment that may suggest itself to you, if the patient is not relieved, small doses of calomel (1/10 gr.), combined with bicarbonate of soda, given every hour until a grain of calomel has been taken, will in the majority of cases have the desired effect. If it does not, after waiting a few hours, repeat the calomel in the same way.

Now, Mr. President, I would like to add a word of warning, that signs of danger and collapse may arise at any time from the induction period until the last drop of the anaesthetic is given; it, therefore, behooves the administrator to be mindful of the fact that during the administration of any anaesthetic eternal vigilance is the price of safety.

DIFFICULT DIAGNOSTIC QUESTIONS IN EVERY-DAY PRACTICE.

GOLDWIN HOWLAND, M.B., M.R.C.P., TORONTO.

There are three diseases which we meet in every-day experience which lead to doubt in our own minds, and in our patients' minds, and which are never definitely settled, and these are (1) Mild Febriculas of two or three weeks' duration, (2) Scarlet Fever, (3) Diphtheria.

We are constantly seeing cases which have as their symptoms the following:

Malaise and disinclination to work and to eat of a few days or a couple of weeks duration, usually without nausea or vomiting, with no marked abdominal signs as a rule; perhaps constipation of a degree more than normal is present and frequently signs of some colonic tenderness and a tendency to gas distention—but no rigidity.

Coryza may be slightly in evidence and occasionally bronchitic cough is present.

Nervous signs are those of any mild infection, such as languor, headache, not extreme in degree, and perhaps a certain degree of bodily felt pains.

Careful physical examination elucidates usually a palpable spleen, but no rose spots. The Widal test is negative both to typhoid and para typhoid tests. Blood culture reveals nothing of value in the case.

Finally the clinical course gives us the picture of a mild febricula, the temperature, rising perhaps to a maximum of 101 for a day or two with a morning fall to 99 in some cases, while in others the course shows a rise and fall between 98.4-5 and 99 as its maximum.

As the first or second week passes, the coated tongue clears, the spleen gradually diminishes, the temperature settles and the appetite returns and the case is cured.

From my late position as Medical Registrar I have seen many such cases under many men, and the diagnoses have always been doubtful to my mind as far as they can be settled at all. Influenza, typhoid, para typhoid, ileo-colitis in the summer season and other intestinal infections all have had their supporters, and many other diagnoses were propounded.

Of the varied diagnoses, two require comment, and are much the more common.

Influenza infections are so frequent both in summer and winter and are accompanied, a fact frequently forgotten, by an enlarged spleen, that in a given case negative to all tests, with such a course as is stated, particularly if the onset tends to be more abrupt, the pains more marked, the tongue catarrhal in appearance and the appetite easily restored, then influenza is the most likely. In this class of case also one must watch carefully the lung condition, for I have several times found consolidation of a lobe occur, evidenced by blood-stained mucus if cough was sufficient to produce expectoration and by the usual physical signs, and yet with no sufficient alteration of temperature, pulse or respiration to attract attention, and latent pneumonia was present. Dr. Chambers has called my attention to this condition in Mitral Stenosis, and in one of my cases marked stenosis was present also.

But most of these cases are undoubtedly typhoid and para typhoid cases of mild severity.

The degree of gradual disinclination to eat and move, the coated tongue clearing as the week and a half passes away, the return of appetite at the close of the attack, and lastly, the appearance which strikes the observer so frequently in typhoid, and the odor which

also is largely distinctive, appeal to one's clinical instincts and over-rule the pathologist's negations.

That many people have typhoid in mild form and work through-out the disease I firmly believe. That others have so mild a course that we misdiagnose it, is a truth most will admit, and lastly, that the more severe cases of all intensity are those with the most definite signs, clinical and pathological, is the common fact we all agree on.

The second common disease we misdiagnose is scarlet fever, and to show my ground for this let me state that in one distant hospital I saw a case visited by six specialists—of these, three said scarlet fever typical, and three said definitely not.

However the point I raise here, I may briefly state, and that is that while scarlet fever is due to a probable streptococcus infection and to a definite type of this family and one that is highly infectious, yet there are other streptococci related, just as the para typhoid is to the typhoid germ, which will produce like symptoms and a rash which is probably so similar that the "Fathers" themselves cannot distinguish it, and yet the cases are of mild or non-infectious nature.

Cases following nasal operation frequently develop such a condition and again whenever infection of streptococcal origin is present on the hand or finger, etc., general scarlet fever rash may occur.

But most difficult of all are those cases, all too common of influenza so called, but which in truth are tonsillar infections by cocci in which a scarlatinal rash appears. Over and over again you hear it said, "Oh, she had a severe influenza with a scarlatina rash."

By this is meant there was sore throat, infective pains in the limbs, head, headache, etc., and that therewith was associated a rash. One must use every possible element in diagnosis in separating the typical scarlet fever from pseudo types in order to save one's patients from long isolation.

In conclusion here let me say that by the greatest care it is usually possible to diagnose by the etiology, the clinical picture, and, unfortunately, finally by the subsequent history between true scarlet fever and pseudo scarlet fever due to allied organisms. In the mild enteric cases the bacteriologist confuses us by declaiming his negative findings, and here he is similarly of no assistance, owing to his failure to capture the distinguishing germs.

My final disease is to refer to a doubt in the bacteriological diagnosis of diphtheria and to again lay stress on the feature that ever impresses me, namely, clinical experience is supreme and bacteriological examinations must be of great importance, but not determination in diagnosis.

Many diphtheritic germs are constantly being carried in healthy throats, quite apart from attacks of the disease. It is claimed and probable that these may produce severe cases of the disease in others.

Frequently in culturing throats for other diseases, influenza, quinsy, streptococcus and staphylococci tonsillitis, rheumatic tonsillitis, and in more inflamed throats, one may meet with the diphtheria organism.

Such a finding bans the unfortunate patient to seclusion for perhaps weeks, until the culture media fails to respond to its pabulum of tests.

Here the clinical man should step in, and I say this knowing that a storm of protests will arise from our diphtheria scared population, which contrasts well with some English districts, where the diphtheria patients, I am told, are in the general ward, a condition I do not, despite the tone of my paper, advise.

If the physician has a primary non-diphtheritic condition and clinically by symptoms and by throat appearance together the case is not diphtheria, yet the cultures show that the diphtheria bacillus is present, then the treatment should be antitoxin to prevent and local care throughout a period till the culture is negative, but the individual should be free to continue his active employment if he possesses mental ability to ensure no carelessness on his part.

THEORY AND PRACTICE IN PERCENTAGE FEEDING.*

BY ALEXANDER A. JACKSON, M.B., BOLTON, ONT.

Applied theory in percentage feeding of infants has in the past produced much dissatisfaction, but owing to the concentrated attention of pediatricists to the subject, especially to the chemical aspect of it, much knowledge has been acquired, and year by year we see theory and practice becoming more nearly a unit.

The chemistry of human milk and of cows' milk is agreed upon by all students of the subject, and though we have so far failed to produce an infants' food from modification of the latter to be quite the same as breast milk, we can so nearly do so, as to greatly simplify the problem of infant feeding.

It is not the object of this paper to present any new material, but to put forth a plea or a more careful consideration of the numerous varieties of digestive capability, so that our percentage

*Read before Ontario Medical Association, June, 1909.

prescription will not be Fat 3.50, Sugar 7.00 and proteid 1.50, but it will be Fat 3.50, Sugar 7.00, and proteid whatever amount the child can digest. The recognition of this situation will make for us an endless number of resources for simple modification of cows' milk, and will necessarily avoid the use of the bicarbonate and the citrate of soda, and of lime water, which, when used, are, we believe, a command for nature to step aside, while a nurse performs nature's work, with a drug and a spoon. I do not hesitate to say that the use of chemicals in infant feeding has been of great benefit. They have helped us through many difficult places, but we would advocate in their stead the simplest possible means of milk modification based on an appreciation of the chemistry of milk, and of the chemistry of digestion.

In speaking of the digestive capability of infants, it must be remembered that at the birth of a child, all its faculties are not developed, and that one child may be more developed at that time than another. A new born child cannot hear. It does not see much, and it is doubtful if it can smell. Is it not fair to assume, therefore, that its peptic cells do not functionate? And so chemicals ought to be regarded by pediatricists as unnecessary in respect to infant feeding, as is the use of spectacles or aurophones, or as is the use of powerful antiseptics in surgical technique. When we give up modification of milk on the principle pointed out by nature, and resort to measures no matter how scientific, or how theoretically true may be the principle upon which they are based, it is because our diagnostic abilities do not comprehend the digestive powers and requirements of individual infants—which is the great factor in the problem.

Before speaking of the practical application of our knowledge, let us recall some of the knowledge that has been handed out to us by the chemist and laboratory man. German schools, which are the home of the laboratory, in showing the value of an energy-quotient in infant food formula, have found that human milk contains 650 calories per litre, with a percentage composition of fat 3.50, sugar 6.50 and proteid 1.50, but a modified milk, with approximately the same caloric value, and having 650 calories to the litre, can be written in three ways, as:

	Fat.	Sugar.	Proteid.	Caloric Value.
1.	2.00	8.00	3.50	657
2.	4.00	6.00	1.00	659
3.	3.50	6.50	1.50	653

It will be admitted that Number 1 is unsuited for many babies, and it is doubtful if any child would continue to do well on either

No. 2 or 3. Besides, the question of water does not enter into this calculation at all, and, as water is a part of the weight of a child, so it must be a part of its food. So that Caloric Value of infant food cannot be the correct method upon which to base a formula. Ladd, of Boston, after feeding twenty (20) infants with the Caloric Value Theory as a basis, concludes as follows: "The Caloric Value of the food expressed either in terms of the number of calories ingested daily, or as the energy-quotient, is not the most important consideration in determining the quality of an infant's food. The nutrition of an infant depends primarily upon its power to digest and assimilate milk. These functions are best served by modifying the percentages of the constituents of milk, so as to adapt the food to the individual needs of the infant. In a given case, neither the number of calories nor the energy-quotient of the food can be positively determined by rule, but like the fats, sugar and proteids in percentage feeding, must be ascertained by experiment. The calculations of calories and energy-quotients in connection with percentage feeding can be easily made, but they add nothing in the way of information which cannot be obtained by careful observation of the gastric and intestinal functions and the weekly gain in weight."

English and American laboratory chemists, in considering that it is the inherent unsuitability of cows' casein, which is the chief difficulty in feeding, have placed before us enough facts to show that by sub-dividing the proteid of cows' milk into caseinogen and whey proteid through the agency of rennet, that a food can be obtained upon which children will thrive and gain in weight. Further, it has been shown by Dunn, of Boston, and Still, of London, that by making whey proteid and caseinogen equal in a mixture, indigestion results, and by making the whey proteid double the caseinogen, the symptoms diminish, while by constituting a formula, consisting of Fat 3.50, Sugar 7.00 and whey proteid .90, with caseinogen .25, there is a maximum gain in weight and a minimum of untoward symptoms. Any variation from this disturbs the upward progress. By application of this knowledge then, the proper proportion of the divided proteid will make a food suitable for the great majority.

It is an easy matter to order such a formula when a milk laboratory is at hand, but, unfortunately for most of us, this is beyond our reach. To this majority I would venture to suggest a practical method of feeding upon a theoretical basis. Two methods are employed. The first is to place the child upon formula of milk, cream, sugar and water, the proportions of which will be presently discussed. The second, which is employed only, when after a trial of two weeks, during which time certain changes are made in the first for-

mula, if the child does not continue to thrive and gain in weight, is the use of whey, cream and sugar.

By the use of new milk, sweet cream (12%), sugar and water, we assume a child can digest some cows' casein, and we begin on a mixture containing a very low percentage of such. For a child of two months which should be fed every two and a half hours on 2 oz. of food at a feeding, we would write thus :

New Milk	3 oz.
Sweet Cream	2 drams.
Sugar	2 drams.
Water	add 6 oz.

This is sufficient for three feedings and will be found to contain approximately, Fat 3.50, Sugar 6.50, Proteid 1.50, and will suit a vast number of infants of this age. This formula is a memorized one, and should any of the common symptoms consequent upon unsuitable food appear, the amount of the constituents is altered to suit the apparent needs. Such needs cannot be enlarged upon in a brief paper of this kind. By shifting the portion of these constituents ever so little at times, it is surprising how many of the so-called difficult cases can be made to do well.

But occasionally one finds cases which refuse to thrive upon any change in this formula. It is then assumed that the child in question cannot digest cows' casein at all. This means that casein must be eliminated from the food altogether, and our second plan is brought into action, viz., the use of whey, cream and sugar. It is scarcely necessary to mention here how to make whey, suffice to say that new milk curdled with rennet and strained through fine muslin will make the fluid desired. Whey and cream in the proportion of 6 to 1, with sugar at the rate of 2 teaspoonfuls to 8 oz. of the mixture, is a preparation consisting approximately of Fat 3.5, Sugar 6.5, Whey Proteid 9.00, Caseinogen .25, and will successfully tide difficult cases over their difficulty. It is found suited to very young infants and for two or three months, by judicious increase of the fat constituent, produces thrift in every way. With this formula, as with Number One, there is room for endless modifications. The great point in its use is to persist long enough. It is only in cases that do not do well under this that we resort to the use of a drug. The bicarbonate or the citrate of soda may be introduced to neutralize the acidity of the whey, but is never used unless, after repeated modifications, bad symptoms persist.

It is quite impossible here to give attention to all the details of employing these methods, but after careful application of the prin-

ciple of the split proteid theory, we are convinced that it is the ideal plan for difficult cases. It may be here mentioned that the obstetrician has not performed his full duty, if, at the time of the birth of an infant, he fails to give explicit instructions as to how the child should be fed. Many a delicate digestive apparatus has been so disorganized through ignorant administration of unsuitable food, and by allowing babies for example, to suck juice from a nipple made from a raisin in a rag, that when the physician comes to deal with a child's indigestion, which is almost sure to follow, he has a task which could have been avoided had definite directions been laid down and followed from the first.

In conclusion, we will admit the plan of feeding herein subscribed is not absolutely accurate, but when tried thoroughly it will be found to meet the requirements of the great majority of cases, and, at the same time, have a measure of scientific applied theory. That each individual infant is a study in itself must be recognized by every practitioner, and changes to suit the need of each should be made for definite scientific reasons. It is a fact to be deplored that too many physicians, who, when difficulties arise, try some new mixture, regardless of its constituents, not to speak of its percentages which is poured in at one end of the digestive tract to be submitted to the alchemy of complex and dimly outlined digestive processes, and the outcome is anxiously awaited at the other to spell success or failure. To avoid this, an understanding of the pathological and physiological digestion of the elements of cows' milk is indispensable.

A COMPLICATION IN THE DELIVERY OF MONSTROSITIES.

BY ALEXANDER A. JACKSON, M.B., BOLTON, ONT.

The following rare condition has recently come under my notice for the first time, and may be of interest to some:

Mrs. W., aged 31, always healthy. One child aged 5 years. Instrumental birth. Four years ago patient had some operation in the vaginal region, of what nature could not be ascertained, but judged it to be for cystocele or rectocele. Became pregnant once afterwards with child still-born.

Became pregnant about July 15th last. Was called March 5th and found labor on with only moderate pains. Abdominal palpation

showed transverse position with large head in right iliac fossa. No fetal heart sounds could be heard or fetal movements felt.

In endeavoring to convert the transverse to a vertex presentation by the combined method the os was found dilated to the size of half a dollar, with membranes protruding and shoulder presenting. During manipulation the membranes became ruptured and an abnormal amount of fluid escaped. Pains ceased immediately and did not return for fourteen hours.

On being sent for again I found the fetus once more in the transverse position. It was replaced to vertex presentation, but after two pains again took the transverse position. It was then decided to bring down a foot and deliver an after coming head at once, as the os was well dilated. The right hand was inserted into the vagina and a mass was felt presenting at the external os, very much like small intestines. A severe pain came on just then and more of the mass was forced down, leaving no doubt as to its being intestine.

I diagnosed rupture of the uterus above Baudl's ring and at once withdrew the hand, administered chloral hydrate and chloroform, raised the foot of the bed and sent for a surgeon to perform Cesarean section. This necessitated a wait of two hours. In less than one hour pains returned again and the nurse called me to come at once as "something was happening." I found a large mass of small intestines presenting through the labia. Another severe pain followed, and the buttocks of the child appeared, followed by the body and presently the head, and after-birth followed in natural sequence.

The child had a hydrocephalic head, cleft-palate, hare-lip, and ununited medium ventral line from the xiphoid cartilage to the os pubis, thus permitting the intestines to come down and be diagnosed in error as those of the mother. The patient made a good recovery.

DOMINION REGISTRATION BILL, 1909-10.

AN ACT TO AMEND THE CANADA MEDICAL ACT.

HIS MAJESTY, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:

1. This Act may be cited as "The Canada Medical Amendment Act, 1910."

2. Section 2 of the said Act is amended by striking out paragraphs (c) and (d) and substituting therefor the following:

“(c) ‘medical school’ includes any institution recognized by ‘a provincial medical council wherein medicine is taught.’”

3. Section 5 of the said Act is amended by striking out paragraph (c) and substituting therefor the following:

“(c) The determination and fixing of the qualifications and conditions necessary for registration, the examinations to be undergone, and generally the requisites for registration.”

Also by adding at the end of the said section the following proviso:

“Provided that the Council shall not determine or fix any qualifications or conditions to be complied with as preliminary to or necessary for matriculation in the study of medicine, these being regulated as heretofore by the provincial authorities.”

4. Section 7 of the said Act is amended by repealing paragraphs (a) and (b) and substituting the following:

“(a) Three members who shall be appointed by the Governor-in-Council, each of whom shall reside in a different province;

“(b) A number of members not exceeding three representing each province fixed in each case according to the number of practitioners registered under the laws of the province, as follows:

“For the first fifteen hundred or fraction thereof, two; for all over fifteen hundred, one;

“and such members representing each of the provinces shall be elected under regulations to be made in that behalf by the provincial medical council.”

Also by repealing paragraph (d) and substituting therefor the following:

“(d) Three members who shall be elected by the homeopathic practitioners in Canada, each of whom shall reside in a different province.”

Also by repealing sub-section 3 and substituting therefor the following:

“(3) No province shall be represented upon the Council until the Legislature of the province has enacted in effect that as to those who have passed the examination prescribed by the council, registration by the council shall be accepted as equivalent to registration for the like purpose under the laws of the province; and when all the provinces shall have legislated in effect as aforesaid, it shall be lawful to appoint and elect in the manner aforesaid the members of the Council; Provided that any province may at any time afterwards withdraw its repre-

sentation upon the council upon being thereunto authorized by resolution of its provincial medical council carried at a general or special meeting called for the purpose by votes of the members thereof present in person, or represented by proxy, representing not less than two-thirds of the entire membership of the said provincial medical council."

5. Section 8 is amended by striking out the word "appointed" in the first line thereof; also by repealing the second and third subsections; also by repealing the ninth and tenth lines of sub-section 4, and substituting therefor the following:

"If a representative of the homeopathic practitioners resigns, to the remaining homeopathic representatives upon the council;"

Also by striking out in the seventh and eighth lines of sub-section 7 the words "recognized distinct school of practice of medicine," and substituting therefor the words "homeopathic practitioners."

6. Section 10 of the said Act is amended by striking out the word "twenty-one" in the second subsection thereof, and substituting therefor the word "eleven."

7. Section 11 of the said Act is amended by striking out the concluding words of paragraph (b) "and the number of members necessary to constitute a quorum;" also by repealing paragraph (g) and substituting therefor the following:

"(g) The establishment, maintenance and effective conduct of examinations for ascertaining whether candidates possess the qualifications required; the number, times and modes of such examinations; the appointment of examiners, and generally all matters incident to such examinations or necessary or expedient to effect the objects thereof;"

Also by striking out the word "Canadian" in the second line of paragraph (8) of the said section, and by adding after the word "colonial" in the same line the words "other than Canadian."

8. Section 12 of the said Act is amended by striking out paragraph (a) thereof, and substituting therefor the following:

"(a) No candidate shall be eligible for any examination prescribed by the Council unless he is the holder of a provincial license, or unless he is a graduate of a medical school or university recognized by a provincial medical council, nor until he has complied with all the conditions, regulations and requirements necessary to render him eligible for examination for a license to practice medicine in one of the provinces of Canada."

9. Section 14 of the said Act is amended by striking out all the

words thereof down to the word "school," inclusive, in the fifth line thereof, and substituting therefor the following:

"The council shall make such regulations as shall secure to homeopathic practitioners who under the laws of any province possess."

10. Section 16 of the said Act is amended by adding at the end of subsection 1 thereof the words, "A majority of the Committee conducting the examination of any candidate shall speak the language in which the candidate elects to be examined;"

Also by striking out the word "and" in the third line of subsection 2, and substituting therefor the word "or."

11. Section 18 of the said Act is amended by striking out the word "six" in the fifth line of subsection 2, and substituting therefor the word "ten;"

Also by adding at the end of said subsection 2 the following proviso: "Provided that if the medical council of any province is not satisfied with the period of years prescribed by this subsection, such medical council may as a condition to provincial registration exact an examination in final subjects from practitioners registered under this subsection."

Also by striking out the word "Canadian" in the third line of subsection 3 and inserting after the word "Colonial" in the same line the words "other than Canadian."

12. The following section is added to the said Act:

"24. No amendment of this Act, or of the Act hereby amended, may be proposed on behalf of the Council unless previously accepted by the provincial medical council."

Medicine

GRAHAM CHAMBERS, R. J. DWYER, GOLDWIN HOWLAND, GEO. W. ROSS, WM. D. YOUNG.

Migraine. By SYDNEY KUH, M.D. *Journal A. M. A.*, Feb. 10.

Kuh, like other prominent men, is a sufferer from migraine, and while giving us a *résumé* of the disease, he has failed to secure a definite cause or a cure for himself or his clientele. He ascribes little influence to causes such as gout, nasal disease, large tonsils, alcohol, nicotin, but greater power to heredity, diet, sexual indulgence, menstruation, bad air at night. Onset occurs in different ways—depression, lassitude and irritability in some, euphoria in others, while a third class has gastro-intestinal disturbance. An eyelid may droop or diplopia occur. Ansa particularly of vision are common, such as hemianopia, scintillation, scotoma, or paraesthesia, aphasias, or mental confusion or fear. The symptoms need not be referred to except the hypothermo of tuberculous cases and the lymphocytosis. No new therapeutic means are given. G. W. H.

A Case of Gumma of the Dura Indenting the Left Hemisphere of the Cerebellum, with Autopsy. BEVERLEY R. TUCKER, M.D. *New York Medical Journal*, March 5, 1910.

Tucker's case of gumma pressing on the cerebellum is not particularly definite. A married woman of 24 had a history of headaches, and occipital pain more recently. She staggered in walking. Her deep reflexes were normal and equal, there was exophthalmos (left and right), and she had some ataxia of both hands, otherwise there were no localizing signs for the gumma subsequently found. A confusing detail was a *left dilated pupil*, due to a localized sclerotic patch in the membrane. G. W. H.

Some Recently Described Symptoms in Spinal Cord Tumors. By PEARCE BAILEY, M.D., New York. *Medical Record*, March 12, 1910.

Choked disc, midbrain and cervical signs may occur in cervical

spinal growths, from secondary hydrocephalus, due either to pressure from the tumor or to associated meningitis. Circumscribed collections of fluid may be found near tumors of the cord causing errors in diagnosis of the position of the growth.

Edema, which may be markedly severe, may occur below a tumor.

Pain may be absent, or may occur suddenly, is rarely constant at the start, and may disappear for some time, to return when cure has been proclaimed.

G. W. H.

The Treatment of Locomotor Ataxia. Graeme Hammond, *Post-Graduate*, February.

Hammond advises strychnine as the best treatment, combined with modified *Fraenkel exercises*.

For one week $1/30$ of a grain is given three times a day, then $1/20$, and finally $1/16$. At the end of the third week he gives a minim of a grain to the ounce solution with the $1/16$ grain, and increases a minim a day up to 30 drops, *i.e.*, $1/16$ grain, or a total of $1/8$ grain a day. This is maintained for three months, and by use of the minim solution increased up to $3/16$ grain a day. Finally he reaches $1/2$ grain three times a day, and keeps this up for a year, and then gradually reduces it.

The treatment relieves the pains, and stops the disease, but does not cure.

The urethral treatment, and sodium cacodylate intraspinal injections were both strongly deprecated in the discussion.

Regarding this strychnine treatment, I would add that it requires the re-attention of the profession. It is extremely difficult to keep the tabetic patient satisfied with the usual drugs, as they seem to desire courses of treatment. Graeme's method appears sensible, and very easily managed, although its basis is as old as the hills.

G. W. H.

Tabes Dorsalis and the Ersatz-Theorie. COLIN K. RUSSELL, *Montreal Medical Journal*.

Edinger's theory that "Function determines the symptoms" is worked out by Russell in some cases entering the Royal Victoria Hospital.

Loss of sensation in the bladder in one patient, naturally allowed prolonged retention of urine, therefore, wall overstrain, and hence, inability to empty the organ.

Over use of limbs in a second case was followed by loss of sensory cell activity, and as a result ataxia developed.

In a third Argyle Robertson pupil preceded as usual accommodative defect to distance since reaction to light is more commonly exercised than the latter function.

Finally in two cases of optic atrophy, one was due to the occupation requiring excessive use of the eyes in tailoring in a badly lighted room, while the other originated from reading by night to excess.

G. W. H.

Acute Anterior Poliomyelitis. R. T. WILLIAMSON, *Medical Chronicle.*

The infectious nature of infantile paralysis is undoubted, and its great mortality among fowls is a proof of the fact. Syphilitic infection may produce a like disease. It may occur in eight forms, namely, polyneuritic, poliomyelitic, Landry-line, pontine, encephalitic, meningitic, abortive and ataxic types.

Infective signs may be the only symptoms, and of these, sweating, leucopenia and hyperesthesia of the limbs may occur early.

The tendon reflexes may precede paralysis, while spinal rigidity, retraction of the head and peripheral cranial nerve paralysis occur.

In the Westphalian epidemic, the mesenteric glands, spleen and mucous membrane of the bowel were swollen.

Diplococci and other micrococci have been obtained from the spinal fluid; in other cases negative findings are recorded, while cultivations from cord and fluid are negative.

Transplantation of cord to monkeys produced the disease, and the suspected germ is not destroyed by freezing. Urotropin is the only remedy suggested as useful.

G. W. H.

Ophthalmology

D. N. MACLENNAN, W. H. LOWRY.

Glare—Its Causes and Effect. J. HERBERT PARSONS, of LONDON.
The Lancet.

Dr. Parsons read this paper before the Royal Society of Arts in January. By glare he means the uncomfortable sensation experienced when a bright light shines directly into the eyes. It is well known that if the eyes be bandaged lightly to exclude light for about half an hour the retina reaches its maximum sensibility, that is, will appreciate a glimmer of light which will be quite invisible under any other conditions. Conversely if the retina be exposed to light it becomes less sensitive to light impressions, so that a much greater degree of change of intensity of illumination is necessary to produce a conscious impression than in the former instance. Thus he thinks that the condition of adaptation of the retina is one of the most important factors in the production of glare.

The direction of the rays plays a large part in the production of glare, and the direction from a surface upward toward the eyes, as from the sea, or a glazed sheet of paper, is the most effective. Excess of contrast causes glare, as in the instance of a motor lamp at night or the beams of light from a lighthouse. The intensity of the light or perhaps the particular form of energy in the rays of light influences the amount of glare.

In the milder forms of glare the discomfort experienced does not amount to pain, but the prolonged screwing up of the eyes and puckering up of the eyebrows will induce pain. The puckering of the brow is especially painful by squeezing the supra-orbital nerve against the frontal bone. The more marked forms of glare cause pain from the outset, and it is not improbable that the pain is due to the excitation of the sensory nerves in the cornea, ciliary body or choroid.

With regard to the effects of glare these may vary from mere discomfort to permanent scotomata with pathological changes in the retina. Various grades may be met with. There may be a mere blurring or negative after-image, which is transient, after exposure to strong light or there may be permanent blind spot, or, as is sometimes seen in the tropics or at sea, night blindness results from the severe retinal exhaustion.

Puerperal Amaurosis. SYDNEY STEPHENSON, *Ophthalmoscope*,
March.

The article contains the notes of numerous cases and does not lend itself to synopsis, but the conclusions will interest the reader. These are as follows:

1. That a form of amaurosis or amblyopia, not accompanied by ophthalmoscopic signs, or, at least, by none adequate to account for the condition, may supervene during pregnancy, parturition, or the puerperium.
2. That rarely it may assume the form of a hemianopic defect or of a central scotoma in the fields of vision, and still more rarely of hemeralopia (night blindness).
3. That it is often associated with such signs and symptoms of toxæmia as headache, edema, eclampsia and scanty urine containing albumen, casts and blood.
4. That it appears to form one of the rarer manifestations of toxæmic poisoning.
5. That it is not proved to be dependent upon uremia, although it has usually been confused with so-called "uremic amaurosis."
6. That it recovers, as a rule, completely within a few hours or days.

W. H. L.

A Case of Eneuresis with Hypermetropia.

The Lancet notes a case of eneuresis in an intelligent girl of seven years. She developed diurnal eneuresis when she began to attend school. There was nothing locally or in her general health to explain the disorder. Hypermetropia, J. 5. 0. was corrected, all medication was stopped (this, by the way, had been tried unsuccessfully), and the girl became relieved of the troublesome condition.

W. H. L.

Amblyopia Following Iodoform Poisoning.

Rolhon Duvignaud reports a case of a young man in whom, after puncture of a cold abscess in the inguinal region, iodoform and glycerine were injected, so that 6-7 gms. of iodoform were absorbed. The general symptoms of iodoform poisoning lasted ten days. Visual disturbances with optic neuritis appeared six weeks after the injection. The fundus became normal again, but a marked contraction of the visual field and a central scotoma for red and green persisted.

W. H. L.

Trachoma. L. J. GOLDBACH, M.D., Baltimore, in *New York Medical Journal*.

Dr. Goldbach gives a review of the recent observations of trachoma bodies which are now being considered as a factor in the causation of trachoma. Many observers have found the bodies in a large proportion of the cases, and one observer, Prowazck, found the organism or body in 90% of cases. The method Goldbach employed to demonstrate their presence is as follows: Scrapings from the conjunctiva are spread upon sterile cover slips. These are air-dried and immersed in absolute alcohol for 15 minutes, then allowed to dry, and stained by the following method: 12 parts of Giemsen's Eosin solution, 3 parts of Agar No. I., 3 parts of Agar No. II., are mixed and filtered. This is brought to a temperature of 37° C. and the cover slips allowed to float in this solution for six hours, then washed with sterile water, dried and mounted for examination. In looking for the bodies, which are difficult to find, one should look first for an epithelial cell, in which, in acute and untreated cases, the organism may be found. In the cells they appear as very minute bodies, smaller than the smallest coccus, appearing conjointly or like a diplococcus. They are usually surrounded by a clear area of cell and they stain a deep violet and at times with a pink tint. The significance of this cell invasion by the trachoma bodies is not known, but it is probably a cell degeneration, a parasitic transformation, or a peculiar attraction the cell has for them. Prowzack thinks the organism is something between a protozoa and a bacterium and puts it among the organisms that cause chicken pox, scarlet fever and hydrophobia. Attempts to make a growth of the organism on culture media have failed as yet, but Holberstädter and Prowzack inoculated the eyes of one of the orang-outangs, and in a few days they showed a typical attack of trachoma, which, upon examination, yielded similar bodies to the trachoma bodies.

W. H. L.

Reviews

Pocket Therapeutics and Dose-Book. By MORSE STEWART, JR., B.A., M.D. Fourth Edition, Rewritten. Small 32mo of 263 pages. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$1.00 net. Canadian Agents: The J. F. Hartz Co., Ltd., Toronto.

In the preparation of this the fourth edition of this very practical and helpful little book, all obsolete remedies have been eliminated, whilst new remedies, approved at large by the profession, are incorporated therein. It will be found of especial value to students, nurses and pharmacists.

Diseases of Children. An Authorized translation from "*Die Deutsche Klinik*," edited by ABRAHAM JACOBI, M.D., LL.D. New York: D. Appleton & Co. Toronto: D. T. McAinsh. 828 pages. Price, \$6.00.

The name of the editor of this book, Doctor Jacobi, of New York, is a sufficient guarantee of its excellence. Based as it is upon the experience and teaching of the best German institutions and professors, it invariably gives one the very best scientific basis for the methods and treatment employed.

The subjects treated in this work are rather unusual for an American reader, but still most instructive. First of all attention is devoted to the diseases of the new-born, such as defective development, trauma during birth, and diseases of the eyes. This latter subject is fully dealt with, and the great importance of gonorrhoeal inflammation is emphasized.

The constitutional diseases, such as sclerosis neonatorum, are next dealt with, and the opinion is advanced that want of proper early feeding, *i.e.*, starvation, is the cause of the jaundice, the body albumin being used up.

Again, an important point is made in regard to tuberculosis. It is positively stated that the disease may be transmitted by the mother to the child in utero.

Also the danger of the infant becoming infected by insufflation method of resuscitation is pointed out.

Next, infant feeding is treated in a scientific manner, and many

helpful suggestions offered for the treatment of acute and of chronic digestive disturbances.

Much space is devoted to the nervous afflictions of childhood, convulsions, and functional diseases.

Diseases of the mouth, nose and larynx are also reviewed, and finally the infectious diseases, measles, etc.

The diseases we are accustomed in Canada to meet, such as appendicitis, diabetes mellitus, etc., are not touched upon.

To those wishing a book full of good scientific facts, and the latest pathologic anatomy of disease, there is none more acceptable than this one. The translation is ever good English, whilst retaining the spirit of the original German. The text is illustrated by over thirty illustrations and drawings; there is a complete index of authors and of subjects. The work is nicely bound and printed. To those desiring a work, scientific, accurate, and touching upon many subjects not found in the ordinary text book, one has no hesitancy in recommending this translation to them.

A. C. H.

Diseases of the Nose, Mouth, Throat and Larynx. By ALFRED BRUCK, M.D. Edited and translated by F. W. FORBES ROSS, M.D., Edin., F.R.C.S., Eng., assisted by FREDERICK GANS, M.D. New York: Rebman Co. Price \$5.00. Canadian agents: J. F. Hartz Co., Limited, Toronto.

This book is intended to meet the requirements of the men in general practice. It is a most useful work for the specialist also, and is one of the best that the reviewer has read. The book is divided into four parts, each part into a general and a special section. The former describes the anatomy, physiology, methods of examination, routine of examination (anamnesis, status presens, etc.), general treatment, hygienic and prophylaxis. The special section takes up the individual diseases, shortly and concisely—perhaps too much so, so far as treatment is concerned, not many details being given, and for the minutiae of the major operative procedures, larger works must be consulted. There are some 600 pages, of which over 250 are devoted to the larynx. The illustrations are numerous and excellent. Where all is good, it is hard to particularize, but mention must be made of the section on the mouth, of the chapters on nasal reflex neuroses, on chronic laryngitis, and on affections of the voice in singers and orators.

The work needless to say is thoroughly up-to-date, and the

author warns against too great operative zeal—a warning needed, perhaps, on this side of the Atlantic.

The translators' work is well done—they "having endeavored, as much as possible, to closely follow the German text"—although one meets constantly with the split infinitive, and the expression "per orem" for "per os."

G. B.

Diagnostic Therapeutics. A Guide for Practitioners in Diagnosis by Aid of Drugs and Methods other than Drug-Giving. By ALBERT ABRAMS, A.M., M.D. (Heidelberg). Consulting Physician to the Mount Zion Hospital and the French Hospital, San Francisco; formerly Professor of Pathology and Director of the Medical Clinic, Cooper Medical College (Medical Department of Leland Stanford Junior University), San Francisco. *Naturam Morborum Curationes Ostendunt.* With one hundred and ninety-eight illustrations. New York: Rebman Company, 1123 Broadway. Canadian agents: J. F. Hartz Co., Limited, Toronto.

Many subjects are common to both diagnosis and therapeutics, and as in all other branches of medicine overlapping occurs, and yet I consider it a distinct disadvantage to increase the medical library by conglomerate subject as "Diagnostic Therapeutics."

This work naturally includes under Etiology, drugs, food and other methods, all of which would be more fully taken up under Toxicology, Dietetics and Infective agents and physical diagnosis.

"Drugs in Diagnosis" is an excellent chapter, which would make an excellent manual by itself or a good addition to a therapeutic work. Its clinical value would be greater if its details were applied to the diseases themselves.

"Methods other than Drugs in Diagnosis"—Diets, Electric Testing Gymnastics, the Vibro-Suppressor, Litten Phenomena, Heliotherapy Lavage, etc., have their proper subjects in other volumes.

The last two chapters on "Etiologic-Diagnostic Therapeutics," distilled from Medicine and "The Diagnosis of Visceral Sufficiency" from Physical Diagnosis, are absolutely out of place even in this volume.

But while opposed to the material being used to form a new subject, yet Dr. Abrams has collected in this volume an enormous amount of valuable material, and much of it new, and knowing that he has already committed a "Physical Diagnosis" one feels that he

is preparing to present us with a marvellously complete "Therapeutics," and that this volume is a "feeler."

These 1000 pages are a partial encyclopedia of medicine; it will appeal to many as a very valuable boon; it is well worth reading. The accumulated facts are in many cases beyond one's easy finding elsewhere, and yet I feel that Dr. Abrams can make his "Physical Diagnosis" more modern by including much he has left out and placed in here, and by preparing Abrams' "Therapeutics," which will contain the rest.

G. W. H.

The Sexual Life of Woman. By HEINRICH KISCH, M.D. Translated by M. EDEN PAUL, M.D. New York: Rebman Company. Canadian agents: J. F. Hartz Co., Limited, Toronto.

This is a work of value chiefly to the gynecologist or family physician. Many subjects are treated which concern only the most secret workings of the family affairs.

Many of the subjects treated doubtless come to the attention of physicians, and much good may be obtained by physicians in reading it. The work is, I take it, only intended for the profession, as outside of them the work would certainly be considered unsuitable for the general public. It may be of value, however, to some, but that is doubtful.

A. C. H.

Epidemic Poliomyelitis. Report of the Collective Investigation Committee on the New York Epidemic of 1907. (*Journal of Nervous and Mental Disease*, Monograph Series No. 6. 64 West Fifty-Sixth Street. New York: 1910. Pp. 119. \$2.00.)

This valuable brochure is an account of an investigation made by a committee of thirteen who were appointed by the New York Neurological Society and Academy of Medicine; five sub-committees were formed to study the epidemiology, conditions of onset, symptomatology, pathology and treatment of the disease respectively. It is stated that "at least two thousand five hundred cases occurred in New York and its vicinity during the summer and autumn of 1907." A complete account of 752 cases was obtained. Of the conclusions stated by the different committees the following may be quoted: "It was impossible to discover any susceptibility to the disease according to nativity in the cases reported. The disease was moderately communicable; about as much so as epidemic cerebrospinal meningitis. Among the most marked features of this epi-

demic were the irritative nervous (i.e., meningeal) symptoms at the time of onset and during the first few days, giving rise frequently to great difficulty of diagnosis. In seven cases no paralysis was observed until the twenty-first day; it occurred within the first week in 60 per cent of the cases. The lower extremities were the first affected in 370 cases, the upper in 83; paralysis of the back was noted in 24 per cent., of the abdominal muscles in 6 per cent. Babinski's sign was found on both sides in 14 cases, one side in 19." The treatment is adequately discussed from every point of view, and the chapter on pathology is exceedingly valuable. It has been shown that the virus obtained from the human spinal cord can set up acute poliomyelitis in monkeys, and that the disease can then be transmitted from animal to animal indefinitely; the sub-dural route of inoculation is the most reliable, but others are successful. The virus resides in the brain, but has not been demonstrated in the cerebro-spinal fluid. It is probably protozoal, and not bacterial; it is closely allied to the virus of rabies.

The whole volume is well written, and the multitude of observations are excellently arranged and interestingly presented. The committee and editor deserve the highest credit for a valuable contribution to an important subject. In view of the fact that this disease is still so prevalent we can cordially recommend the book to general physicians; to those specially interested in poliomyelitis it is indispensable.

E. J.

Symptoms and Their Interpretation. By JAMES MacKENZIE, M.D., M.R.C.P.; Physician to the West End Hospital for Nervous Diseases, London; Author of "Diseases of the Heart," etc. Toronto: D. T. McAinsh & Co. 297 pages. Illustrated Price, \$2.25.

MacKenzie, of Burnley, has already charmed us with that classic book on Heart Disease, which on this particular subject has become practically a medical bible, and has developed all over the world a new means of study, besides engrafting on all our minds the fact that heart muscle is the prime basis from which to consider all cardiac changes.

MacKenzie, of Burnley, has essayed to give us another culture from his wide field of experience, and he has taken as his subject the great undecided question of Visceral Sensation.

He does not believe in sensations of pain being directly carried cerebralwards from the viscera, but reflex tracts motor or sensory

in close nervous relation to the viscera affected are rendered hypermotile or hypersensitive, and it is from these referred areas that we receive our critical impressions. This idea is broadened and carried to a conclusion in many different systems, but its value, both to ourselves and to MacKenzie himself, is mainly from its application to those vexing problems in connection with abdominal pain.

From a large experience he relates and describes the areas in which pain was felt by the patient, the hyperesthesia that accompanied it and the actual organic disease found at operation or post-mortem. Admitting Mackenzie is correct in his vast number of cases, yet that does not absolutely prove his contention of visceral unconsciousness, and each practitioner must swell the field with his cases for and against.

He who fails to read this book is missing not only interest but some good means of aid in his everyday diagnoses.

G. W. H.

Dominion Medical Monthly

And Ontario Medical Journal

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GEORGE ELLIOTT, MANAGING EDITOR

Published on the 15th of each month. Address all Communications and make all Cheques, Post Office Orders and Postal Notes payable to the Publisher, GEORGE ELLIOTT, 203 Beverley St., Toronto, Canada

VOL. XXXVI.

TORONTO, MAY, 1910.

No. 5.

COMMENT FROM MONTH TO MONTH.

Canadian Medical Association.—For the purposes of transportation in connection with this Convention, on the 1st, 2nd, 3rd and 4th of June, in Toronto, the Canadian Dental Association has been coupled, so that if three hundred are in attendance holding Standard Convention Certificates at both, return fare will be free.

The Standard Convention Certificate plan prevails as far west as Laggan and Coleman, B.C. From North Pacific Coast points there is a tourist rate with extended time limit. Intending delegates require no special certificate from the General Secretary, but when purchasing first-class transportation to Toronto should ask for Standard Convention Certificates for themselves, wives or daughters (no others). These, when signed and viséd (fee for viséing, 25c.), in Toronto will entitle holders to reduced transportation returning. Consult ticket agents as to dates of sale of tickets, time limits, steamboat arbitraries, routes, etc. East of Port Arthur three days (not including Sunday) before meeting are allowed and three days after. The C.P.R., G.T.R., C.N.R., Intercolonial, and the navigation companies join in the arrangements.

Dates of sale of tickets, Winnipeg to Emerson and East, May 27th to June 1st; west of Winnipeg to Moose Jaw and Saskatoon, including branches, May 26th to May 31st; west of Saskatoon and

Moose Jaw to Coleman and Laggan, B.C., including branches, May 25th to 30th. Certificates will be honored at Toronto up to and including July 1st.

The place of meeting of each section will be plainly marked on the plan at the entrance to Convocation Hall, and admission to each will be by ticket only.

The exhibits of the various sections, and by leading manufacturers of articles of interest to the profession, will be placed in the approaches to Convocation Hall and the Official Bureaus of the Association.

Members are invited to inspect these thoroughly.

The Queen's Hotel will be the headquarters of the Association. Delegates should make reservations immediately.

The fee for membership is \$5.00. Pay to Treasurer, Dr. H. B. Small, Ottawa, at any time. New members should apply at meeting when registering for Application for Membership forms. They must be recommended by two members of the Association. The transportation arrangements apply to them as to members.

On the afternoon of Thursday, 2nd June, there will be an excursion by steamer *Turbinia* to Port Dalhousie; thence by electric railway to Niagara Falls. Refreshments on boat; dinner at the Clifton House; returning to Toronto in evening. There will also be an excursion by special C.P.R. train to Guelph, as guests of the Guelph Medical Society, to visit the Ontario Government institutions, and other points of interest, leaving Toronto at 11 a.m. on Saturday.

The General Secretary, Dr. George Elliott, 203 Beverley Street, Toronto, will be pleased to furnish promptly any further information required.

The annual meeting of the Canadian Medical Protective Association will be held on Friday afternoon at 5.30 p.m., when its President, Dr. R. W. Powell, Ottawa, will submit his annual report.

Dominion Registration—This discussion will be introduced by Dr. Roddick on the evening of the first day, following the address in Medicine.

In addition to the Presidential Address, there will be one in Medicine by Dr. Herringham, of London, England; one in Surgery by Dr. J. B. Murphy, of Chicago, and a third in Gynecology by Dr. Henry C. Coe of New York.

The Milk Commission will report on the afternoon of the first day, and several leaders in this field from the United States will contribute to the discussion.

Two Symposia have been arranged, to which the various sections

will contribute: one on Exophthalmic Goitre, the medical aspect of which will be treated by Prof. McPhedran, of Toronto, the Surgical by Prof. F. J. Shepherd, of Montreal, and the Pathological by a gentleman from New York; and another on Psycho-Neuroses, of which Drs. J. J. Putnam, of Boston; August Hoch, of New York; W. Hattie, of Halifax and Ernest Jones, of Toronto, will each present various aspects.

Medical Education will be dealt with by Prof. J. C. Connell, of Queen's University, Kingston.

All of the above will be given in the Convocation Hall during the afternoon or evening sessions before all the members.

There will be Sections in Medicine, Surgery, Obstetrics and Gynecology, Pathology, Pediatrics, and Diseases of the Eye, Ear, Nose and Throat. These will be held each forenoon. Most extensive programmes have been prepared for each, some seventy papers in all being already promised. The Sections in Medicine, Surgery, Obstetrics and Pathology will each hold three morning sessions, *commencing at 9.15 on Wednesday the first of June*. The attention of members is especially called to the hour of meeting so that there may be no disappointment. The Section of the Eye, Ear, Throat and Nose, and the Section on Pediatrics, will each hold one session only, viz., on Thursday the second of June.

To Mention Dominion Registration is to think of Dr. Roddick, and to mention Dr. Roddick is to bring into mind Dominion Registration. Dr. Roddick's name and work have so long been identified with this important matter that the two are inseparable. It is just as certain that Dr. Roddick would wish to round off his lifework by establishing Dominion Registration as the profession throughout Canada would wish that his would be the hand that would bring it about.

The position of the matter at the present time is that there is no hope of legislation at the present session of Parliament, owing, we understand, to British Columbia members of the Special Committee of the Canadian Medical Association wishing to submit the proposed amendments to the Canada Medical Act to the Medical electorate of the Pacific Province.

The five-province clause, almost unanimously favored by the meeting at Winnipeg last August, has been abandoned; and the period of the "retroactive" clause has been advanced from "six" to "ten" years. This means that a person properly qualified to practice in any one province may be registered to practice without

examination anywhere in the Dominion of Canada after he has been engaged in practice ten years.

As the matter is to be presented at the Canadian Medical Association in Toronto on the evening of June 1st, and as there is to be ample time for full and extended discussion, it is hoped all the members of the Special Committee will be present, as well as those who acted with the Committee from the Medical Councils, in Montreal, last November.

On another page we publish the proposed amendments in full.

This is a question so long on the boards that the profession throughout Canada will expect matters will this time be adjusted satisfactorily, and Dominion Registration finally and effectively established.

The Departure of Dr. Charles Sheard from the position of Medical Health Officer of Toronto is a loss to the city which cannot at the present time be correctly or properly adjudged.

A fearless and brilliant administrator, he conducted his department of civic government with such splendid success that leaves nought but an exceedingly difficult path for his successor to tread.

Ever watchful and eternally vigilant in the interests of the public health of Toronto, there is not a single spot in the administration of his office to the wrong side of his account.

A professional man, a doctor of medicine, he has proven his ability as a high-class business man; and it is a question if he was not far too big for the position he so long filled to the satisfaction of the community.

Being an eloquent platform speaker and debater, probably the best in the medical profession in Canada, his talents eminently qualify him for front rank in the Parliamentary halls of his country.

PROVISIONAL PROGRAMME—CANADIAN MEDICAL ASSOCIATION.

Address—Dr. W. A. Evans, Chicago.

Address—Dr. Charles E. North, New York.

Symposium on Exophthalmic Goitre—Medical Aspect, Prof. McPhedran, Toronto; Surgical Aspect, Dr. F. J. Shepherd, Montreal.

Symposium on Psycho-Neuroses—Dr. J. J. Putnam, Boston; Dr. August Hoch, New York; Dr. W. Hattie, Halifax; Dr. Ernest

Jones, Toronto. Discussion by Drs. C. K. Clarke and Helen Mac-Murphy, Toronto.

The Psycho-Neuroses from the Standpoints of the Neurologist—Dr. Joseph Collins, New York.

Medical Education—Dr. J. C. Connell, Kingston.

Typhoid Carriers—Dr. W. T. Connell, Kingston.

A Discussion of the Causes Interfering with the Regular and Continuous Development of the Child—Dr. A. D. Blackader, Montreal.

Anterior Poliomyelitis—Dr. C. K. Russel, Montreal.

Diphtheria—A. H. Gordon, Montreal.

Title to be announced—Dr. D. A. Shirres, Montreal.

Orthostatic Albuminuria—Dr. Graham Chambers, Toronto.

Treatment of Acne Vulgaris by Vaccines—Dr. Geo. W. Ross, Toronto.

Title to be announced—Dr. R. D. Rudolf, Toronto.

Title to be announced—Dr. A. R. Gordon, Toronto.

Title to be announced—Dr. R. J. Dwyer, Toronto.

Title to be announced—Dr. W. F. Hamilton, Montreal.

Patent Medicines—Dr. John Ferguson, Toronto.

Sudden Attacks of Pain in the Pyloric Region—Dr. Goldwin Howland, Toronto.

A Comparison of the Results in Pulmonary Tuberculosis in Institutions and Private Practice—Dr. J. H. Elliott, Toronto.

The Blood in Pulmonary Tuberculosis—Dr. A. F. Miller, Kentville, N.S.

Experimental Intra-Thoracic Surgery, with a Résumé of Recent Progress in the Use of the Differential Pressure Apparatus—Dr. Von Eberts, Montreal.

Gangrene—Dr. E. W. Ryan, Kingston.

Perforation of the Intestines in Typhoid Fever—Dr. Geo. E. Armstrong, Montreal.

Appendicitis in Children—Dr. T. Wood.

Duodeno-choledochotomy, with Report of a Case—Dr. Jasper Halpenny, Winnipeg.

An Interesting Case of Diaphragmatic Hernia—Dr. J. M. Cotton, Toronto.

Fractures about the Elbow Joint—Dr. W. E. Gaillie, Toronto.

Tumor of the Cerebrum, with Presentation of Patient—Dr. Geo.

A. Bingham, Toronto.

Title to be announced—Dr. Murray MacLaren, St. John, N.B.

Title to be announced—Dr. Ingersoll Olmsted, Hamilton.

Title to be announced—Dr. Gibson, Sault Ste. Marie.

Title to be announced—Dr. W. G. Turner, Montreal.

Title to be announced—Dr. A. Mackenzie Forbes, Montreal.

The Neurasthenic Conditions: Referable to the Eye, Ear, Nose and Throat—(a) The Eye, Dr. R. S. Minnes, Ottawa; (b) The Ear, —————; (c) Nose and Throat, Dr. Jamieson, Montreal. Discussion by J. P. Morton, Hamilton.

Nasal Polypi—Dr. C. C. McCullough, Fort William. Discussion by Dr. Geoffrey Boyd, Toronto.

The Diseased Tonsil—(a) Its Effects upon the General System, Dr. W. P. Caven, Toronto; (b) Its Surgical Treatment, Dr. J. G. Sutherland, St. Catharines. Discussion by Dr. Price-Brown, Toronto.

Trachoma—Dr. H. S. McKee, Montreal.

Title to be announced—Dr. R. H. White, Montreal.

Reflex Nasal Neuroses—Asthma, Hay Fever, Paroxysmal Sneezing, Dr. C. M. Stewart, Toronto.

Ectopic Gestation—Dr. Munroe, Saskatoon, Sask.

Obstetrical Technique—Dr. Bogart, Kingston.

Obstetrical Diagnosis—Dr. Little, Montreal.

Title to be announced—Dr. Evans, Montreal.

Early Diagnosis of Uterine Cancer—Dr. A. C. Hendrick, Toronto.

An Attempt to Produce Immunity to Scarlet Fever—Dr. Wm. Goldie, Toronto.

Pericarditis in Children, with X-ray Photographs—Dr. Jos. S. Graham, Toronto.

The Operative Treatment of Congenital Hydrocephalus—Dr. Edward Archibald, Montreal.

Examination of Fæces and Urine for Typhoid Bacilli, Especially in Typhoid Carriers—Dr. W. T. Connell, Kingston.

Title to be announced—Dr. C. P. Howard, Montreal.

Title to be announced—Dr. J. J. McKenzie, Toronto.

Title to be announced—Dr. T. G. Brodie, Toronto.

The Estimation of Nitrogen and Ammonia in Urine—Dr. J. B. Leathes, Toronto.

Trachoma Bodies—Dr. W. H. Lowry, Toronto.

Rabies—Dr. J. A. Amyot, Toronto.

Title to be announced—Dr. A. H. Caulfield, Gravenhurst.

A Critique of the Wassermann Reaction and Its Modifications—Dr. J. G. Fitzgerald, Toronto.

The Bacteriology of *Aene Vulgaris*—Dr. Geo. W. Ross, Toronto.

Interpretation of Public Health Laboratory Reports—Dr. D. G. Revell, Edmonton.

The Occurrence of a Fat Splitting Ferment in the Urine in Cases of Pancreatitis—Dr. Edward Archibald, Montreal.

Title to be announced—Dr. C. B. Keenan, Montreal.

Some Notes on the Biology of the *Uncinaria Americana*—Dr. F. B. Gurd, New Orleans.

Concerning the Development of the *Spirochaeta Duttoni*—Dr. J. L. Todd, Montreal.

Typhoid Meningitis—Dr. W. J. McLachlin, Montreal.

Title to be announced—Dr. S. B. Wohlbach, Montreal.

The Action of Drugs on the Salivary and Bronchial Secretions—Drs. A. H. Taylor and V. E. Henderson, Toronto.

Title to be announced—Dr. J. C. Beatty, Gravenhurst.

The Clinical Estimation of the Coagulation of the Blood—Dr. R. D. Rudolf, Toronto.

Biliary Cirrhosis of the Liver—Dr. O. R. Mabee, Toronto.

The Clinical Examination of Fæces—Dr. F. W. Rolph, Toronto.

Congenital Cardiac Disease—Drs. Maude E. Abbott and Joseph Kaufmann, Montreal.

News Items

SIR JAMES GRANT, Ottawa, will spend the summer abroad.

DR. JAMES THIRD, Kingston, will sail for Europe in June.

CANADIAN MEDICAL ASSOCIATION, Toronto, June 1st-4th, 1910.

DR. MURRAY MACFARLANE, Toronto, has been visiting in Atlantic City.

DR. F. N. G. STARR, Toronto, has been visiting in Washington, D.C.

PROF. J. J. MACKENZIE, Toronto, has returned from a trip to Washington, D.C.

A COUNTRY practitioner desirous of moving to Toronto will hear of a good practice and property for sale by applying to this office.

DR. CHAS. J. HASTINGS, Toronto, has returned from a trip to Victoria, Vancouver and Prince Rupert, much improved in health.

THE attention of our readers is drawn to the programme of the Canadian Medical Association on other pages.

AT a late date standard certificate plan has been put in force for British Columbia for the C. M. A. meeting.

A COUNTRY practitioner desires to dispose of a good \$4,000 practice and property. For particulars apply this office.

DR. ADAM H. WRIGHT, Toronto, President of the Canadian Medical Association, will sail for Europe on the 18th of June.

DR. A. A. MACDONALD has been elected President of the Toronto Academy of Medicine, and Dr. Harley Smith, Hon. Secretary.

DR. W. A. YOUNG, Toronto, President of the American Medical Editors' Association, will leave for the annual meeting in St. Louis on the 2nd of June.

DR. HENRY C. COE, New York, is to deliver the address in Gynecology at the meeting of the Canadian Medical Association on the evening of the 3rd of June.

THE Canadian Medical Protective Association will hold its annual meeting in Toronto at 5.30 p.m., June 3rd, in the Auditorium of Convocation Hall, University of Toronto.

DR. GEO. D. PORTER, Toronto, travelling medical secretary of the Canadian Association for the Prevention of Tuberculosis, while in British Columbia is a guest of Dr. C. J. Fagan, of the Provincial Board of Health.

THE President of the British Columbia Medical Association, Dr. R. W. Irving, Kamloops, B.C., would be glad to learn of any Eastern men who will visit the Pacific Province in August, as their annual meeting is fixed for August 16th and 17th, 1910.

ON the Canadian Pacific and Northern Navigation steamboats (Upper Lakes) the following arbitraries will be in force for Canadian Medical Association meeting in Toronto, June 1st to 4th; Going rail, returning boat, \$8.50 additional; going lake, returning rail, \$3.50 additional; both lake trips, \$12.50 additional.

MEMBERS of the Canadian Medical Association, as well as members of the Canadian Medical Protective Association, will learn with sincere regret that Dr. R. W. Powell, Ottawa, has not been in good health recently. Dr. Powell has not missed an annual meeting since the last meeting in Toronto in 1899, when he was elected President; and all will hope he will be able to be with us this year as usual, in the enjoyment of his usual good health.

THE following manufacturing firms will exhibit at the coming annual meeting of the Canadian Medical Association in Toronto, June 1st to 4th, 1910: Henry K. Wampole & Co., Perth, Ont.; Charles H. Philips Co., New York; The Denver Chemical Mfg. Co., New York; J. B. Lippincott Company, Philadelphia and Montreal; The Waterbury Company, Toronto; Burroughes, Wellcome & Co., London, Eng., and Montreal; Fairchild Bros. & Foster, New York; Gilmour Bros., Montreal (Horlick's Malted Milk); Brand & Co., London and Montreal; Abbott Alkaloidal Co., Chicago (W. Lloyd Wood, Toronto); The Wingate Chemical Co., Montreal.

Publishers' Department

EVILS OF MAL-NUTRITION.—Disturbances of nutrition are the most frequent causes of chronic diseases, and again have the appearance of various illnesses of an acute character. Diathesis is a permanent disturber of nutrition, which prepares, provokes, and maintains different diseases, as seen in their location, their evolution and pathological process. The reaction of a disturbed nervous system, induces temporary disturbances of nutrition. If nerve reaction, by corrupting nutrition of the moment, can produce the morbid opportunity, it may also modify nutrition in a lasting manner and develop diatheses, but it will be acquired diatheses. The diathetic nutritive disorder is more than a morbid threatening; it is disease in activity. Here is an arthritic. How soon will he be seized with an attack of gout? What explains and links the attacks together is precisely this diathetic state, which is the result of a failure of nutrition. Before every illness there is a disturbance in life, for nutrition is life. Digestion requires that the foods should be not only softened, but thoroughly adjusted and normally assimilated. The patient, taking no combustible material from without, thrives upon his individual tissues. He finds that it is impossible for him to properly digest. He cannot, therefore, normally nourish like other individuals, and it is here that the physician tries, by various means, to introduce into his organism, combustible material and not allow him to consume his own tissues. It is now admitted that in the course of infectious diseases there exists a perversion of the nutritive process. As the results of the derangement of nutritive processes, there are various conditions of dissimulation, disease is likely to arise from derangement of the nutritive functions. When normal nutrition is lowered, as in gouty and obese patients, certain nerve conditions are likely to develop, such as dejection, melancholy, a lack of desire for work and migrain, and it is frequently observed in the renal, cutaneous, the pulmonary excretions and incomplete oxidized products of dissimulation. In all forms of auto-infection and disease the result of mal-nutrition, bovine feeding is an able prop to both the patient and physician in the handling of his case, for it stimulates the normal flow of the digestive fluids, encourages proper assimilation, and supplies all elements of nutrition to meet the demands created by the stimulation, thereby fortifying the system in overcoming the mal-nutrition and enabling Nature to attack the auto-intoxication and disease through natural methods.

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NOT INCOMPATIBLE.—In an original article written for *Medical Reprints*, Dr. George Selkirk Jones writes:—"Another, and most important, subject for study will be that of incompatibility with respect to Antikamnia. At present I have not encountered this difficulty, for in the treatment of rheumatism, for example, with alkalis and potassium iodide, the occasional use of antikamnia tablets appears to act as a most useful auxiliary, and a quiescent condition of nerve, brought about by the action of the latter, appears to predispose towards a more perfect metabolism. In this respect I believe that antikamnia tablets are destined to play a new and important role in medical therapeutics, for if a nerve-storm can be controlled during the course of a painful malady for which the appropriate remedies are being exhibited, the chances are that the simple alleviation of pain for the time being may greatly facilitate the removal of the original cause of the malady. I have a case on hand at present in which this new feature is presented, viz., hemierania in a woman, the result of periodic attacks of hepatic congestion, nothing appearing to influence the portal circulation so satisfactorily as *caseara sagrada*. This latter was taken at regular intervals during the day, whilst a single dose of two antikamnia tablets taken at bedtime produced in the mind of my patient a doubt as to which remedy was entitled to the credit. On my part I can attribute the good results already obtained to both, each having its allotted task to perform, the one hepatic, the other central, or neurotic. And so with reference to rheumatism, I am looking forward to a like happy experience. Why should the administration of iodide of potassium or salicine interfere with the action of antikamnia? At present I see no reason, but, on the contrary, shall continue to prescribe the latter as a "night cap," whilst relying upon the therapeutics of anti-rheumatic remedies."

ACUTE INTESTINAL OBSTRUCTION.—J. W. D. Maury, New York (*Journal A. M. A.*, January 1), distinguishes between pathologic death, particularly that induced by bacterial agents, and physiologic death, that form of dissolution of somatic energy that follows parathyroidectomy, and that associated with adrenal and pituitary lesions, and takes up the latter, including in it that dissolution of somatic life brought about by the mechanical interference with the detoxication of the normal secretions of the body. Such, he says, seems to him, after careful thought, to be the probable condition which obtains in the duodenum when the normal current of the intestines is blocked. It has been suggested by Welch, when com-



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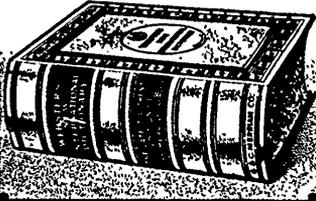
TORONTO AND WINNIPEG

menting on the preliminary reports of the investigation, that the experiments strongly suggest an actual internal secretion from the duodenum. It may take years to make the conclusion to which he thinks his experiments may lead scientifically acceptable, and he submits his present account of his work more for the importance of the idea than for other reasons. He asks to be allowed to start with the hypothesis that the obstruction causes no ill-effect save through an interference with the physiologic balance of the duodeno-jejunal secretions, and is purely physiologic. The nervous shock, which is more pronounced from cutting the intestine at this point than further down, is transitory, and experience has shown that it is not dangerous. It is therefore, he thinks, negligible as a cause of death. The bacterial infection causing pathologic death from wounds of the intestine are not frequent when the injury is in the duodeno-jejunal region. Bacteria are not found in the blood as a result of obstruction in this part. This is because the bacterial flora of the duodenum is very slight, and because death usually occurs before there is much, if any, impairment of the intestinal wall in these cases. Much has been attributed to the decomposition of food but experience has shown that if the stomach and duodenum had been emptied, death occurs just the same. It was accidentally noticed in a series of experiments for creating a delayed gastroenterostomy, that closure of the oral portion of the intestine (duodenum) almost always caused death before the cutting through of the delayed enterostomy by the McGraw ligature employed. Somewhere between the thirty-sixth and seventy-second hour, the experimental animals were seized with symptoms peculiarly resembling those of parathyreopriva, and frequently died in less than eighteen hours, the course from post-operative seeming health to death being usually very short. It was found that death would not occur in a medium-sized dog if the obstruction lay more than 35 cm. aboral to the pylorus, the addition of a relatively short portion of the jejunum to the oral loop sufficing to prevent the dogs from dying within this short period. It would seem either that the jejunum mucosa had the property of absorbing the poisonous products from the duodenal region, and in some way rendering them harmless, or else it secreted an enzyme which acted as an antibody for the poisonous products. His experiments also proved that the bile did not enter as a factor into this physiologic death, but that, quite irrespective of this, a large proportion of the dogs lived when the pancreatic secretions drained aborally, and that they died under stoma control when it was confined in the oral loop. We must however not forget that the secretions of the gastric mucosa may also be toxic, and that this toxicity may be

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greatly increased by an oral intestinal obstruction; but he thinks it fairly established that a toxemia developing from a disturbance of the duct-bearing portion of the duodenum contains poisons of an exceedingly grave nature. Without suggesting that trypsin alone is responsible for this physiologic death, he mentions it as one of a class occurring in the duct-bearing portion of the duodenum, the antibodies to which have been definitely found. The hypothesis offered in this paper is that duodenal secretions of either intra-enteric or extra-enteric origin, were, in their disturbed function, responsible for the death following duodeno-jejunal obstruction. Some such hypothesis is needed to explain the singular syndrome of symptoms, as well as the singular protective power of the first thirty-five centimetres of the intestine, the presence of which in the oral loop suffices to prevent death before the opening of the stoma control. Two therapeutic considerations are offered. One is, that the lesion is an enteric one, and the source of the toxemia is in the duodenum. The second is, that the blood must be filled with the toxic products whatever they are, and that the modern method of bleeding followed by transfusion from a healthy individual is indicated. He also suggests a third, namely, that a protective serum may possibly be developed from the long loop dogs, i.e., when the obstruction is lower than the duodenum in the intestine. The paper concludes with several references to other investigations, which may be taken as supporting or favorable to the hypothesis here offered.

THE THERAPEUTIC UTILIZATION OF BILIARY FISTULAS.—L. L. McArthur, Chicago (*Journal A. M. A.*, January 1), having noticed the loss of water in irrigating biliary fistulas, conceived the idea of studying the effects of various fluids introduced through this route into the duodenum. First, as a means of deluging the system with water, he found that a temporary fistula may often be utilized with surprisingly good effects. He has repeatedly injected in such cases, by continuous irrigation of a warm salt solution up to 3,000 c.c. of fluid as a means of flushing out the kidneys, clearing up a jaundice or filling up the blood vessels, and in one case, even added dextrose as supplying the food calories most readily assimilable. He is not recommending a cholecystotomy as a therapeutic measure for other ailments than those for which it was originally designed, but simply the utilization of already existing fistulas for indications similar to those mentioned.