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Original Communications.

INFANT FEEDING AND INFANTILE DIARRHEA.*

BY J. T. FOTHERINGHAM, M.D.

Mr. President and Gentlemen of the Canadian Medical Association:

My first duty, as it is a pleasure, is to express my high appreciation of the compliment paid me by yourself, Sir, and your committee, in inviting me to read the Address in Medicine before our National Association, an association which exercises the hegemony among all the medical societies of the country, as the country does among the colonies of the Empire. Permit me to suggest, in passing, that in my opinion our Association has borne no insignificant part, and will bear yet a much greater part, in the forging more closely of the chains that bind into one the once disunited portions of the Canadian unit in Britain's congeries of nations. For you notice that I refer to it as a National Association. I think, too, that I may safely prophesy, though neither a prophet nor the son of a prophet, that we shall from this date gain greatly as an association by the rising tide of national sentiment, a tide which has risen, I rejoice to say, only more slowly than that greater, more beneficent tide, like the tide of our Mother Land's own universal ocean, the tide of Imperial sentiment and of quickened love for the Greater Britain, the wide world over, of which we as a nation form only a part—indeed, I need only point to the unprecedented success of the present meeting as a proof of the upgrowth of the sentiment of Canadian solidarity, for without that sentiment even the skilful and energetic management of the committees of the Association would have been much less fruitful of results—but I must ask your pardon for a digression so far removed from the subject of my paper, and come

* Prepared for the Canadian Medical Association, Toronto meeting, 1899.

back to the sober fact that I have undertaken a task which I feel is too much for me. I can pretend to no very special knowledge of the subject beyond that which careful reading and conscientious clinical observation can produce, and cast myself upon your indulgence, with the request that the discussion to follow may be free, and with the hope it may be helpful both to myself and to us all. The selection of a subject was difficult, and I was influenced in my choice mainly by the fact that it is at this time the one specially prominent in practice. I can assure you that I feel my own limitations, and that, as may seem right and proper in the discussion of this particular subject, I have the mind "even of a weaned child."

The importance of the subject need scarcely be insisted upon before an audience like this, to whom the preventability of the "Slaughter of the Innocents," caused by diarrheal disorders, is coming to be known. I have pleasure in presenting to you the following tables, kindly prepared for me by Dr. D. McGillivray from statistics placed at my disposal by Dr. P. H. Bryce, of the Provincial Board of Health, to both of whom my thanks are due. These tables have reference to the city of Toronto and the Province of Ontario, and constitute a powerful argument for an educational campaign by this Association against public ignorance in the matter of infant feeding. Yet even among ourselves it may be well to look for the beam in our own eyes. I was struck recently by the forceful character of some of the remarks of Mr. Marmaduke Shield in a lecture given in St. George's Hospital, in London, "On the Management of Some Cases of so-called Simple Fracture." After expressing surprise and regret at the little importance attached by students, and "especially," he says, "junior practitioners" to the study of these common accidents, he goes on, with, I fear we must admit, great truth, to single out this very disorder, as follows:

"It is the same in medicine: obscure maladies, which usually terminate in pathological investigation and speculative methods of treatment, fascinate the modern student more than the treatment of pneumonia and infantile diarrhea. All must fly before they can swim. I regret to say that one cannot excuse teachers and examiners from complicity in fostering this hollow and foolish tendency in modern clinical education. It is most detrimental to after success in practice and reputation."

After undertaking the preparation of a tabulated statement of the incidence of infantile diarrhea, I found that only for the past two years has a satisfactory method been in vogue in the Registrar-General's Office. The Bertillon classification of diseases now adopted is very satisfactory, but previous to 1897 cholera infantum, diarrhea acuta and dysenteria acuta were so

mixed up that absolutely accurate statistics cannot be compiled for my purpose. The accompanying tables will clearly show, however, (1) The incidence of the disease by months, July and August, having an especially bad pre-eminence; (2) The enormous preponderance of deaths from infantile diarrhea before the end of the first year, the remarkable falling off in the second year, and the still more marked "zone of safety" upon which the child enters with the third year, so far as diarrheas are concerned.

Taking the figures for 1897 for Toronto, as a basis, it will be seen that 31.23 per cent. of all deaths in Toronto occur under one year, and that 5.15 per cent. of all deaths are due to diarrhea under one year. Of the total deaths under one year (977) diarrhea causes 161, or 16.48 per cent. These figures compare distinctly favorably as regards infant mortality with those given for the larger American continental centres.

Further calculations show that there are more than three times as many deaths from all causes in the first year than in the next four years of life put together.

As regards the season of greatest incidence the figures show with the greatest monotony the decided beginning of the epidemic in June, its worse incidence in July, though during August it remains almost as severe, a drop to about one-half in September and its disappearance in October.

TABLE I.—TORONTO.

Showing infant mortality under five years, of diarrhea. (For 1897 and 1898, figures are for three years and under.) It shows also incidence by months, and incidence by years of age.

	1898.	1897.	1896.	1895.	1894.	Totals.
January	1	..	1
February	3	1	2	1	1	8
March	2	..	1	..	1	4
April	2	2	1	1	2	8
May	1	1	4	5	..	11
June	3	13	16	10	3	45
July	53	22	65	77	61	278
August	48	64	48	53	60	273
September	38	46	17	34	21	156
October	25	14	2	12	8	61
November	4	5	1	1	2	13
December	4	5	2	1	3	15
Totals.....	183	172	159	196	162	
1st year.....	173	161	150	158	136	
2nd year.....	9	10	
3rd year.....	1	1	9	18	26	

550 INFANT FEEDING, INFANTILE DIARRHEA.

TABLE II.—SIMILAR TABLE FOR PROVINCE OF ONTARIO, 1897.

Total deaths, 25,307; total deaths from cholera infantum and infant diarrhea, 1,082; that is, about one in every twenty-five deaths in the Province was due to this disease.

January	13	July	166
February	18	August	338
March	14	September	293
April	13	October	103
May	12	November	25
June	52	December	18
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1st year	925	
2nd year	121	
3rd year	11	
4th year	25	
Total	1,082	

TABLE III.—TORONTO.

	1898.	1897.
Total deaths from all causes	2,871	3,122
Under one year from all causes	875	977
Under two years from all causes	85	91
Under three years from all causes	41	62
Under one year from diarrhea	173	161
Under two years from diarrhea	9	10
Under three years from diarrhea	1	1

Investigation from these figures shows that 36.2 per cent. of the total mortality occurred under three years in 1897, and 34.86 in 1898, also that 31.23 per cent. of the total mortality occurred under one year in 1897, and 30.47 per cent. in 1898. We find, too, that 5.15 per cent. of all deaths occurred from diarrhea under one year of age in 1897, and 6.02 per cent. in 1898; and that of all deaths under one year in 1897, 16.48 per cent. were due to diarrhea, and no less than 19.77 per cent. (one in five practically) in 1898.

TABLE IV.—TORONTO.

	1898.	1897.	1896.	1895.	1894.
1st year	875	977	935	979	933
2nd to 5th year	192	271	243	303	268

TABLE V.—TORONTO.

Number of deaths from diarrhea per 1,000 infant deaths occurring under five years and under one year.

	1898.	1897.	1896.	1895.	1894.
Under 5 years.	171.5	137.8	135.0	152.9	134.8
Under 1 year.	197.7	164.7	160.4	171.6	145.7

Seibert's interesting investigations show that the temperature curve corresponds identically with the mortality curve of diarrhea. He says that an average minimum temperature of about 60° F. is needed to start the epidemic, and that it must continue about a week before any marked increase in the number of cases is noted. Holt suggests that the very sudden rise in July is due to the debilitating influence upon susceptible infants of the heat of June—not to any special malignity of the "Dog Days" of July, for the average temperature of July is only 4° F. or 5° F. higher than that of June and August. The figures for Toronto show much greater persistence during August than in New York, where the mortality over three years is just about half as great as in July, the total deaths from diarrhea in Toronto for the five years, 1894-98 inclusive, being 278 for July, 273 for August, 156 for September, and only 44 for June and 61 for October.

TABLE VI.—SHOWING TEMPERATURE DETAILS FOR YEARS 1894-98 (INCLUSIVE).

	JUNE.			JULY.			AUGUST.			SEPTEMBER.		
	Average Temp. for month.	Difference from average for 18 years.	Highest daily Temp. during month.	Average Temp. for month.	Difference from average for 18 years.	Highest daily Temp. during month.	Average Temp. for month.	Difference from average for 18 years.	Highest daily Temp. during month.	Average Temp. for month.	Difference from average for 18 years.	Highest daily Temp. during month.
1894.....	60.45	+4.34	90.7	69.10	+1.48	89.19	65.29	-0.09	85.1	62.25	+3.72	84.1
1895.....	67.90	+5.61	93.1	66.23	-1.41	90.0	65.09	-1.17	84.0	60.63	+2.03	93.1
1896.....	64.75	+2.36	86.3	68.72	+1.10	91.3	67.49	+1.28	89.9	57.41	-1.92	96.3
1897.....	61.3	-1.12	84.4	72.11	+4.49	93.3	64.75	-1.54	82.8	60.84	+2.23	93.2
1898.....	65.42	+3.01	90.5	70.5	+2.70	95.5	63.72	+3.48	96.0	62.8	+4.15	97.1

You will have noticed that in 1897 the mortality for July was only 22, while in the other four years of the series it was 53, 65, 77 and 61. So remarkable a difference called for some

explanation, which lies ready to hand in the accompanying Table No. VI., showing among other particulars, the average temperature for June, July, August and September for the five years to which the mortality tables apply. The exceedingly interesting fact is thus elicited that the July for which the mortality was so low, was preceded by a June in which the average temperature was only 61.3° F., nearly 4° F. lower than the lowest June in the series, and nearly 7° F. lower than the highest June of the series. This July of low diarrheal mortality, however, was itself much the hottest July of the series, 4.49° F. hotter than the average July in fifty-eight years. We find, consequently, that the August following had a mortality of 64, much the highest August in the series, and was followed by a September of exceptionally high mortality, 46. In other words, the epidemic of 1897 was delayed a whole month by the low temperature of June. The months of greatest mortality were August and September instead of July and August, and the net result was the same as in an average year.

Seibert's view as to the correspondence of the heat-curve with the mortality-curve is thus amply borne out by the data for Toronto, as is also his statement that an average of at least 60° F. is necessary for the development of the epidemic. And Holt's theory that the heat of June is the cause of the July mortality is strongly confirmed.

Jennings, of Detroit, in the Address in Medicine before the Michigan State Medical Society this year, tells us that "in Detroit, for the year ending July 1st, 1898, 35 per cent. of the total deaths were under the age of five years, and 25 per cent. under the age of one year. Most of the deaths under one-year are due to nutritive disorders directly or indirectly the result of improper feeding."

If further argument were needed, one might quote Emmett Holt in his address of last year to the American Pediatric Association, in which he states that during the past eight years, of 151 children left under his care during their entire infancy, not one had died, though only thirty of the number were breast-fed during the most of the first year, and ninety were entirely bottle-fed. From inquiry among physicians in New York in the same field of practice, Dr. Holt further concludes that "in the well-to-do classes, with the best care, the mortality from all causes during infancy does not exceed 2 or 3 per cent., as against a general mortality for this period among all classes of about 20 per cent. These are most healthful signs, and show the possibility of a very great reduction in infant mortality everywhere with a better understanding of all conditions, but especially of infant feeding."

As regards the title of my paper, I wish to say beforehand

that I intend referring to infant feeding only in so far as it is a cause of infantile diarrhea, and of course, also in so far as it bears upon treatment. The feeding of the normal infant I do not intend to take up, more particularly as the programme includes a paper upon this subject from my friend Dr. A. R. Gordon, of this city.

After a *résumé* as concise as possible of our present knowledge of the physiology of infant digestion it would seem logical to proceed to the discussion of the bacteriology and pathology of infantile diarrheas, and, therefore, endeavor to classify them in various ways, upon bases clinical, anatomical and bacteriological in hopes of clarifying our thinking and rendering our diagnostic habits more orderly and exact. The main part of the paper will then follow, a discussion of the treatment of these affections, dietetic, hygienic and medicinal. The drugs recommended I think it better to treat by themselves, in groups, as stimulants, digestives, purgatives, astringents, antiseptics, sedatives, and so on.

With regard to the physiology of infant digestion, it differs, as is well known now, in certain important respects from that of adult digestion. Rotch divides the life of a child as regards nutrition into three periods—first, the first year; then the second and third years; and third, the remainder of childhood. The natural aliment for the first of these periods is, of course, breast milk. First, as regards digestion in the mouth. During the first year, at any rate till the teeth appear, the mouth bears little relation to digestion, less than in adult life, its function being merely the mechanical one of sucking. The saliva is practically absent, being unneeded, till the tenth or twelfth week, and with the advent of the teeth and the possibility therefore of less fluid dietary, the saliva becomes more abundant and much more actively diastatic.

Then as to the stomach. First, as to its capacity, the interesting measurements given by Rotch and others may be boiled down for all necessary purposes to the following:

- 1 oz. at birth.
- 2 ozs. at two weeks.
- 6 ozs. at six months.
- 9 ozs. at twelve months.
- 12 ozs. at eighteen months.

The position of the organ in the baby is more vertical than in the adult, mainly because of the undeveloped condition of the fundus, which practically does not exist till the teeth begin to come and the diet to be altered, a very interesting point if we remember the physiology and functions of the adult fundus.

The secretions of the stomach are three, pepsin, hydrochloric

acid and the rennet ferment, Hammarsten's lab-ferment. The latter is much the most important of the three, as it is the precipitating agent, causing coagulation of the proteids.

The functions of the stomach then are mainly twofold. First, it is a reservoir, and second, it coagulates the proteids and sends them on for intestinal digestion. To these two duties of course must be added the partial digestion of proteids (usually only very partial), and the absorption of fluids, peptone and crystalloid material, *e.g.*, sugar.

The stomach of the nursing baby under one month is usually empty one hour or a little more after feeding. This period slowly lengthens until at eight months or so it takes two or three hours to empty its contents into the duodenum. This is very interesting when considered in connection with the normal physiological interval for feeding, the child up to two or three months usually insisting upon being fed every two hours, and the interval gradually lengthening to three or three and a half hours. So that the infant if left to itself will, by the promptings of animal instinct, give the stomach quite the same proportion of physiological rest as the adult does, indeed probably much more punctiliously than most adults do. The duration of stomach digestion is much prolonged if cow's milk is the food, or if disease exist.

Third, as to the intestine. This is much the most important portion of the alimentary canal. It is less closely tethered up by the mesentery than in the adult—the duodenum is much smoother and freer from folding and pouching than in the adult, a circumstance connected, as Rotch points out, with the fact that there is less need for delay of its contents in the infant than in the adult.

It is interesting, too, to note that while in the adult a ratio in length between the large and small intestine is, respectively, about as five to one or one and a half, in the infant it is as nine to one and a half, a fact suggestive of the great importance of the small intestine in the child, and portentous as to the ill-results in the infant of derangement of its functions as in cholera infantum.

The most active secretion in the small intestine, as in the adult, is the pancreatic juice which is active in the digestion of fats from the very first, and which digests the larger proportion of the casein from the stomach. The large size of the liver at birth bespeaks the importance of the bile as a peristaltic stimulant, and as an assistant in the digestion and absorption of the fat which the nursing infant gets in such large proportions. The bile doubtless assists in preventing in the infant the constipation which would prevail in the adult upon a similar diet.

The colon, as in the adult, is a reservoir for feces, digestive power being absent and absorptive power slight.

We turn now to the bacteriology and pathology of the alimentary canal.

Normally at birth the whole canal is sterile, but in a few hours bacteria are found throughout its whole length. The stomach, as a rule, is practically free, except in disease, but in the intestine there are two obligatory or constant forms. Escherichs was one of the original investigators in this direction, and Krus, Biedert, Baginsky, Lessage and many others have added to his work. On this side of the water, Booker's exhaustive investigations are indispensable to any one wishing to study the subject, especially his communication in the Johns Hopkins Hospital Reports, Vol. VI., 1897. It has been found that the two obligatory bacteria in healthy nurslings are *B. lactis aerogenes* and *B. coli communis*. The first form thrives in the presence of milk sugar, and is, therefore, most abundant in the upper parts of the small intestine; the *B. coli communis*, as its name implies, prefers the lower small intestine and the colon. In diseased conditions these normal relations are disturbed and the bacteria are formed in enormously increased numbers in other than their own portion of the canal, with new-formed and greatly increased toxicity, and in company with others of upwards of thirty different varieties in different cases as studied by Booker, and including various micro- and strepto-cocci and bacilli the exact bacteriological condition cannot, of course, be clinically determined in each case, but it may vary from the simple non-inflammatory dyspeptic diarrhea with no bacterial abnormality, to the severest streptococcal gastro-enteritis, with all sorts of bacterial combinations and grades of clinical severity between, which, of course, makes classification very difficult, as we shall see. Various forms of *Proteus vulgaris* are common, and usually in severe cases.

As regards the pathology of infantile diarrhea, it is not necessary that I should occupy your time with any discussion of the lesions of the alimentary canal. I prefer to pass on to a brief statement of the lesions found secondarily in other viscera. Suffice it to remind you that the most fulminant cases may be those in which death is due to toxins which leave behind but little trace of damage to the alimentary mucosa anywhere; while in other cases, the mucosa is found in any stage of destruction, from mere hyperemia and superficial loss of continuity to severe inflammation with infiltration of leucocytes, erosion, necrosis and sloughing right through to the serous coat, luxuriant bacillary invasion of the tissues of the bowels and chronic ulceration of the bowel if life be sufficiently prolonged.

From the classical investigations of Booker we gather information which I have summarized as follows: as to the morbid anatomy of the other viscera.

I. In acute cases:

1. The spleen—always hemorrhagic, large and juicy, with distended vessels and extravasations, and often focal necrosis in the lymph nodules like that in the solitary glands in the intestine—is frequently infiltrated with the same bacteria as found in the intestine.

2. The liver—nearly always engorged with blood, the cells separated by widely distended capillaries and showing fatty degeneration or becoming necrotic.

3. The kidneys—some cases show presence in kidney tissue of the intestinal bacteria, *B. coli comm.* and *B. lactis aerog.* Every case shows necrosis of epithelium in convoluted tubes—the capsules of the glomeruli sometimes show signs of inflammation or are plugged with coagulated albumen, and the tubules sometimes contain hyaline casts, especially if the case is somewhat chronic—the kidney as a whole is usually enlarged, congested, with marked striations, and capsule stripping off easily.

4. The lungs—give cultures of bacteria more frequently and with greater luxuriance than any of the other viscera, *B. lactis aerog.* and *B. coli communis* most commonly, Booker saying expressly that "the gastro-enteric canal is the starting point of the general infection," and that "the same bacteria found in cultures from the stomach and intestines appear in cultures from the other organs."

Lobular hemorrhages of greater or less extent are often seen; the bronchial tubes are more or less filled with mucus, and broncho-pneumonia of more or less severity exists, always recognized as an almost necessarily fatal complication.

II. In chronic cases, meaning either those which begin without great acuteness or which have survived an acute attack of, say, three weeks (Holt says six weeks), the prevailing lesions are much the same as detailed in acute cases, with difference due to longer duration of the lesion; for instance, the kidneys contain hyaline casts, and show more markedly necrotic condition of epithelium especially of convoluted tubules. In one case Booker noted that "the brain surface was covered with a thick layer of bacteria."

1. The spleen—of twelve examined, ten showed hemorrhage, sometimes very extensive; six showed focal necrosis in the lymph nodules.

2. The liver—of ten examined all showed great capillary distention, and all showed cell necrosis, often of the entire lobule, and, if less severe, limited to the centre of the lobule.

Miliary abscesses may occur if life be sustained for a sufficient time.

3. The kidneys—of eleven cases only one seemed normal. All the rest showed as the most constant lesion necrosis of the epithelium of the convoluted tubules. Hyaline casts were common. Intracapsular inflammation, though rare, was noted.

4. The lungs—only one case seemed normal out of twelve. Almost constantly, lobular pneumonia of more or less severe grade was seen, with bacterial invasion of lung tissues often very luxuriant and hemorrhage, and sometimes consecutive atelectasis.

As regards relative importance, Booker finds, as clinical experience would lead us to expect, that lesions of the lung are the most serious. Next in importance are those of the kidney, while those of the liver and spleen are neither so constant nor so disabling. Booker states also that "a direct relation between the bacteria and the lesions in the solid organs is seldom demonstrable, except in the lungs. . . . In other organs the lesions resemble those resulting from the absorption of the toxalbumen products of bacteria," such as necrosis of kidney or liver epithelium.

It is accepted as proved that there is no specific organism of the disease, and a very important point is the fact now generally admitted, that the normal bacteria, particularly the *B. coli comm.*, may develop varieties of great toxicity. What the conditions are that produce this variant growth is not yet known. But one proof of the truth of this view lies in the report made by Lesage on his attempts at the serum treatment of infantile diarrhea, in *Rev. de Therap. Med. Chir.*, No. 24, 1896. His serum was obtained from asses after injection with colon bacilli from virulent milk or stools. Twenty-six out of fifty-two children treated with this serum (exactly 50 per cent.) lost all marked symptoms in less than forty-eight hours, fourteen were improved, and twelve unimproved. In all cases where the stools were green the color disappeared after the injections, and what is singular, unless the theory of variation in toxicity of colon bacilli be wrong, he found that the serum obtained from asses after treatment with the colon bacilli of normal stools did not give these results. (Blackader, in Sajous' *Cyclop. Pract. Med.*, Vol. IV.)

As regards the third main head in the plan of this paper, namely, classification, I beg you to bear with me if I first of all lay what may seem to be undue stress upon the importance of it. Diagnosis, oftentimes sufficiently difficult in concrete cases, is manifestly impossible unless we carry in our heads clear conceptions of the varieties of the disorder. Of course we assume that typhoid fever, the acute specific fevers, particularly scarlet fever and pneumonia, and intussusception, are all excluded.

A clinical classification may first be attempted, based upon the symptoms. Thus cases may be :

1. *Acute.* (a) Acute intestinal inflammation from the first, with little constitutional poisoning, thus corresponding to the adult type.

(b) Virulent toxemia or even general infection with little evidence of intestinal lesion.

Or

2. *Chronic,* in which

(a) Intestine shows severe and obstinate ulcerative inflammation, or

(b) Persistent malnutrition and loss of assimilative power with little or no inflammatory process.

Again, while the primary trouble in all cases is the gastro-enteric infection, in some cases the outstanding symptoms soon cease to be those due to lesions of alimentary canal, and come to be those due to lesion in other organs, especially the lungs and the kidneys.

Blackader, of Montreal, in a very helpful and exhaustive article in Sajous' *Cyclopedia of Practical Medicine*, Vol. IV., adopts Booker's bacteriological classification, with a little modification as follows :

1. Dyspeptic non-inflammatory diarrheas, functional due to ingestion of irritants, usually food, and most frequently milk.

2. Inflammatory diarrheas in which the symptoms of a toxic systemic infection are predominant.

3. Inflammatory diarrheas, in which in addition to the systemic infection the local inflammatory conditions produce marked symptoms.

4. Chronic diarrheas, in which the acute inflammatory symptoms have more or less subsided, but in which the stools remain abnormal both in character and in frequency, and nutrition is apt to be much impaired.

This latter class is in our opinion a very useful addition of Blackader's to the more purely bacteriological classification of Booker, which is shortly as follows :

1. Non-inflammatory dyspeptic diarrheas.

2. Streptococcic gastro-enteritis.

3. Bacillary gastro-enteritis.

4. Mixed cases.

The latter class of course includes by far the larger number of cases seen in practice.

Still another classification, and I think the most useful of all, is based on anatomical considerations—and it becomes a duty to decide at once whether a case is one of enteritis, colitis, or entero-colitis, since radical differences exist in the treatment to be adopted in each case. For instance, neither opium nor irri-

gation of the bowel can be said to be so necessary in enteritis as in colitis with small frequent slimy and blood-stained stools, tenesmus, and often prolapse of the rectal mucosa. Nor would bismuth be nearly so useful in colitis as in enteritis, with its large, watery, often foul-smelling dejections.

Coming now to the last and most important subject of treatment, permit me to say first, that the necessity for explicit detailed directions in writing is very urgent in all these cases. Only in this way can you impress upon the lay mind the absolute essentiality of what seems to them unimportant details. Particularly in regard to feeding should orders be written out as to composition of food, and quantity and frequency of feeding. I am accustomed, in my attempt to bring the mother's mind around with a wrench to my way of thinking, to tell her that if I were compelled to choose between medicine and food in the treatment of a case, I should not hesitate to throw medicine away and trust to proper feeding. Yet of course, as we all know, we must usually give some medicine, both for its own sake and as a matter of policy, especially in those chronic cases, which for our sins do sometimes afflict us, unless we actually maliciously wish to encourage our patients to leave us for some practitioner who will give them a small sugar pill every fifteen minutes, an experience through which those of us at any rate who practise in urban communities do sometimes pass.

As regards feeding, I should almost apologize for saying first, that an entire and absolute change of diet is a *sine qua non*, and in acute cases the diet has been of course usually milk. The very great value of prompt intervention in acute cases, and of the giving for twenty-four hours, at least, of nothing but from one to two ounces, every two hours or oftener, of sterilized water, to which a pinch of salt and a taste of sugar, preferably milk sugar, has been added, cannot be disputed. It is borne out clinically and by the fact noted by Booker that "none of the bacteria isolated (from the stools) were found to be capable of multiplying in ordinary hydrant water forty-eight hours after it had been inoculated: in all such cases negative results were obtained." After the first twenty-four hours or so are passed it may be well to attempt the use of some nutritive fluid—and at the outset one must decide whether to use albuminous or farinaceous materials. If the stools are not specially foul albumens may be given, and the best one is probably egg-water. White of egg contains about 10 per cent. albumen, and should be diluted with about ten times the bulk of sterilized water, with a little salt and a taste of sugar, as it is stated by Biedert that a solution of albumen stronger than 1 per cent. cannot be digested as a rule by even the healthy stomach, and it is found in practice

that a "3-6-1 mixture," as it is called (3 per cent. fat, 6 per cent. carbohydrates, and 1 per cent. proteids), is a very generally useful form of modified milk, approximating closely an average breast-milk. Another good albuminous food is the red meat juice in drachm doses added to the water or other fluids that may be in use. Liquid peptonoids, panopeptone, and so forth, may be mentioned in this class. As to the farinaceous fluids, they are all of the same type, and may be equally well made from barley, rice, oatmeal, sago, tapioca, corn starch, or arrowroot, so long as one bears certain points in mind. One point is that the more vegetable albuminoids there are the better, and that, other things being equal, the husk and the layers of the grain next it should be boiled as well as the starchy contents of the grain.

Another point is that very thorough boiling is necessary, three to four hours at least, to cause diastatic change and prevent trouble from the indigestible starch. Thorough straining, too, is important. The consistency of a farinaceous fluid should be that of thin to medium cream, such as will pass easily through an ordinary rubber nipple. And now that the nipple is mentioned it is worth while remarking that if the stomach is irritable it is very often due to the fact that the hole in the nipple is too large, and the child swallows too rapidly.

One of the most useful of all the starchy preparations is likewise the oldest, the good old bag of flour the size of the lower half of the forearm boiled steadily for ten hours. The outer shell is thereafter removed, and the firm central part, like a piece of soft white bathbrick, grated down and slowly reboiled as required with water to make a gruel of a consistency varying with the age of the child. For children over six months, at any rate, this is a most useful food in diarrheal conditions.

One will often find whey very useful, made either with sherry, or, what I think is better, essence of pepsin or junket-powder. It makes an excellent vehicle for liquid peptonoids or red meat juice.

Fischer, in a recent number of the *N. Y. Med. Record*, speaks highly of very weak cold tea, especially when stimulation is desired, and of an acidulated drink made by adding to a tumblerful of plain boiled and cooled water five to ten drops of dilute hydrochloric or phosphoric acid, and sweetening with a little glycerine (a powerful antizymotic) or saccharin.

It is well on inaugurating the change of diet to try to lengthen the interval of feeding—always bearing in mind the urgent need of water to replace the fluids drained from the tissues by the diarrheal loss. Thus, if a child has been getting four ounces, two of milk and two of barley water every two and one-half hours, one should try to give, instead, say, four

ounces of barley water with a drachm of red meat juice every three to three and one-half hours. As regards temperature, either extreme seems to me bad, particularly in young infants. Some say that the food should always be cold. This may apply to children of ten to twenty months, but in infants of, say, three months it aggravates pain and has no counterbalancing advantage.

The return to milk should be very tentative. Casein should be allowed last, and fat first in the shape of small quantities of cream, say, half to one teaspoonful at each time of feeding, added to the barley water or other farinaceous fluid, and slowly increased. The cream should never be bought as such, but obtained by removing the top two inches from the jar which has been left five or six hours on the ice.

Rachford goes so far as to say that "cream is theoretically never contraindicated, and can do no harm in any form of a disease, but will be found to serve the best purpose in chronic cases, and after the third or fourth day in acute cases." My own clinical experience will hardly tally with the statement that "cream can do no harm in any form of the disease." The same writer goes on to say that "meat broths contain so little albumen and carbohydrates that . . . they may be given at any time, in either acute or chronic cases, but they are specially indicated in a few cases after the first twelve or twenty-four hours' treatment." One danger in their use lies in the fact that they are very apt to be kept far too long after making, for they very promptly turn stale. A contraindication to their use would be foulness of stools or great frequency and copiousness. If the morbid process be mainly a colitis they can be given more freely.

As regards hygienic measures, one of the very first importance is coolness. During the febrile stages one often sees the little sufferers wrapped up so warmly as to add decidedly to the rate of their exhaustion. The room should be quite cool and airy, and not too bright, for the nervous sensitiveness of the patient is sometimes excessive. Cool sponging with alcohol or some toilet water is very beneficial. On the other hand, if the febrile stage is over, many babies are very much the better of the warm water bag in the cradle. Cold feet and hands call for this measure. And it is often most relieving and soothing to the child, especially in that type of extreme fretfulness and restlessness which usually accompanies nephritis when it occurs, to put him in a hot pack. I have been most gratified with the result of this expedient whenever adopted. And even in feverish cases, when fits of abdominal pain come on, the soothing effect of a hot compress over the abdomen is often most marked.

Of course, a child acutely ill should not be maulled or handled nor taken out in the carriage, and so on, but when convalescence has begun the revivifying effect of pure fresh air, as by a sail of a few hours, or an afternoon at, say, Centre Island here, is remarkable. I was never so struck by this as in the case of an American child brought here very ill from Old Point Comfort, Virginia. I saw him, after the warm season was well on, the day he arrived in Toronto, and he was very sick, emaciated and languid. The next day his mother brought him to my house, and I took for granted at the first sight that this was another of her children, so different was the brisk, active and actually comparatively plump child from the feeble sufferer of the day before. I am certain that it was not food or medicine mainly that produced in twenty-four hours so astonishing a change.

Another hygienic measure worth noting is the careful disinfection of the diapers by boiling. And the nurse should be instructed always to keep the last diaper till another one is soiled for the inspection of the physician when he comes.

As regards medicinal treatment, the first drug group to be mentioned, because it is the one first employed, should be *purgatives*. The best of these is usually castor oil, unless forbidden by marked gastric irritability. I usually employ a sweet castor oil, the composition of which I know, containing 99 per cent. of oil, with a little saccharin, essential oil of almonds and an aromatic ether or two. Castor oil has a great advantage of being speedy and painless unless too large a dose is given, and of having a subsequent constipating effect. It has also a mechanical effect, making it specially good in the early dyspeptic stages of the disorder for the sweeping out of curds, seeds and other offending matter.

The only other purgative of repute is calomel. Lesage prefers calomel if the stomach is suitable. He has two ways of giving it—first, small repeated doses, say, one-tenth to one-fifth grain every one-half hour till bowels move if there be slight fever, soft abdomen, little tympanites and copious stools; and, second, one large dose where the case shows high fever, much distention and foul-smelling and scanty stools. The dose he considers should be for an infant under three months one grain; under one year, two grains, and under three years, three grains.

Other purgatives, such as senna, rhubarb, salines, and so forth, are all more or less bulky and unpalatable, or are objectionable in their mode of action.

As regards *stimulants*, alcohol stands easily first. They are nearly always needed, especially after the acute stage is on. And even from the first, alcohol acts excellently as a carmina-

tive, relieving gastric flatulence. An infant does not need in the most extreme cases, say, of broncho-pneumonia, more than two ounces in twenty-four hours, and in diarrheal conditions two to four drachms is usually plenty. It is better to mix the daily portion at one time, say, two drachms in three to four ounces of sterilized water and give as required. I prefer good brandy for babies, as when diluted it is sweeter than whiskey and they take it better. Wines are not usually good, being either too sweet or too acid, and more apt to disagree. Holt says that in the acute gastro-enteric diseases the depletion is often so great and there is so little absorption of food that the patients must, in certain cases, be sustained by alcohol for several days. We need scarcely, however, nowadays add the warning that the drug should not be used simply from routine.

Other stimulants are ammonia, especially as the aromatic spirit, and caffeine, as cold tea or coffee.

Antipyretics as a class have but small place in the treatment of diarrheal disorders.

Quinine I should not recommend at all, both for its unpalatability, and because it upsets the stomach. Besides I can see no therapeutic advantage in it.

Of the three coal-tar products, phenacetine, antipyrine and antifebrine, the first is the least objectionable in all ways, and is often most useful, not as an antipyretic, though of course it acts so incidentally, but to control excessive nervous irritability, particularly in cases where a mild diarrheal threatens to complicate dentition. In severe diarrheas it should, I think, never be used, for depression will be quite severe enough without it, and water can control the temperature and the nervous symptoms as well.

Antiseptics should *a priori* be most useful, from what we have learned of the bacterial conditions in the alimentary canal. But in practice disappointingly small results are obtained. Foulness of stools is a special indication for their exhibition.

Salol is put first by some. I think it very risky, as nephritis is an ever-present danger in severe cases, and the infantile kidney is peculiarly susceptible to the action of carbolic acid—I have ceased its use altogether.

My favorite is bismuth salicylate, from one-half to three grains according to age. It is sometimes ill-borne and irritating. Others are calomel, bichloride of mercury, biniodide of mercury in one-fiftieth grain doses, usually with potassium iodide. "Of eighty cases, seventy-two cured in two days." (Luff, *Brit. Med. Jour.*, November 16th, 1898, quoted by Blackader, Sajous' *Cyclop. Pract. Med.*, Vol. IV.)

Arsenite of copper, benzonaphthol, menthol and thymol in

one form or another, creosote and carbolic acid are all open to the objection given above; resorcin is very highly spoken of by Fenwick, in three or four grain doses every four hours even to very young infants. I have used it and find it, I think, useful and certainly very readily taken, in syrup and, say, elixir of lactopeptine. Endoxin is one of the new iodine and bismuth preparations, non-toxic; dose, one grain every hour to a child a year old. I have no experience of it in this connection.

As a class antiseptics are depressant to the heart and are of doubtful utility. Plain sterile water in large quantity, ten or twelve ounces a day, will control an acute diarrhea better (and meet other indications besides) by replacing the fuel on which the conflagration in the intestine feeds.

Astringents are theoretically most useful, but practically in the diarrhea of infants are of very little value. They should be preceded by purgation. Bismuth salts come first, and best of these the subgallate, unless one wishes the antiseptic effect of the salicylate. Two to four grains every two hours may be given to a child one year old. Holt declares his preference in the great majority of cases for the subnitrate, but says that at least two drachms a day should be given to a two years old child. Tannic acid, of course, in one form or another, usually a vegetable extract like tinct. of kino, catechu, and so forth, is a very old remedy, but modern practice relegates it to a secondary place. Properly used it is most valuable. The newer forms of it, tannigen and tannalbin do sometimes act very well. Tannigen acted like magic for me this year in doses of three or four grains every four hours in a little white sugar, with a child of ten months which had a persistent chronic diarrhea mainly due to fermentation in the small intestine. The stools were at once reduced from eight to twelve daily, to two. But in acute cases, and indeed in the majority of cases, I think that experience is showing that recovery is not so rapid as when other treatment is adopted. Certainly when severe derangement of secretions exists I have seen tannalbin come through into the bed pan practically unchanged and without effect. As much as forty-five grains a day may be given to young babies, and excellent results are reported, chiefly from the Continent.

Digestives are of great importance, for reasons that it is superfluous to detail. They may be used to predigest the food or be given as medicine. I find lactopeptin either as powder or elixir most useful. Ingluvin, pepsin, pancreatin, etc., are only to be mentioned. As a class they are naturally of more service in chronic than in acute conditions, for in the latter, food is largely withheld as already been.

Opiates.—This class has been purposely left to the last, on account of its great importance. Opium will never lose its value in the treatment of infantile diarrhea, though latterly it is, perhaps, more intelligently used, and one is struck on reading recent literature at the infrequency of any illusion to its use. The best form is, I think, paregoric, for many reasons—palatability, its other constituents, and the fact that it contains opium and not morphine alone. Dover's powder is most useful, but its taste is objectionable. Chlorodyne is too hot, and besides contains not opium, but only morphine, which has more marked constitutional and less local effect on the bowels. Codeine is too mild a narcotic, and in young babies a too decidedly tetanizing agent, as I have seen. Chloral, belladonna, hyoscyamus, and so on, have no place in the treatment of this disease.

The very first rule to lay down about opium is that until a purgative has been given it should not be administered. The next rule is that the dose should not be repeated till the effect of the last one, if full, has passed off. And another, which would seem to lie fairly on the surface and yet is constantly neglected, is that opium should not be given in the same mixture with other medicines, but must be kept by itself and given as occasion requires only.

The chief indication for opium in acute cases is pain. In colitis, with tenesmus and its other characteristics, it is a necessity from the start, and I prefer to give it here in the form of laudanum in a very little, cool, thin, starch paste as an enema, repeated when expelled.

In chronic cases, and especially in cases often seen, in which feeding brings on excessive peristalsis with pain and evacuation of the bowels, it is often quite indispensable. In the latter case I usually order two to ten drops of paregoric half an hour before feeding, according to the age of the child and the length of the interval between feeding. Holt remarks that nothing requires nicer discrimination than the use of opium in diarrhea. Of course even with these little patients caution is needed, and opium must be discontinued as early as possible, for they soon learn to give it up with a bad grace.

Irrigation.—It will not do to close this paper without reference to the use of irrigations. First as to lavage of the stomach. I have never employed it, as the conditions upon which private practice is conducted here practically preclude it, and I cannot help thinking that the great majority of cases we see get along well without it. Intestinal irrigation is quite another matter. It is undoubtedly most valuable, especially at the onset of any acute case, and throughout the course of a colitis or enterocolitis as against the simple catarrhal enteritis.

The cold irrigation is a valuable antipyretic measure, but one to be used with caution, as it may depress before one is aware. The hot irrigation is of value, especially if normal saline solution be used, in cases of great prostration and collapse, and ranks only second to interstitial injections as a stimulative and restorative measure. Irrigations to be effective should be done by a physician, or at least by a trained nurse. Parents cannot usually do it properly. Holt says that they are advisable in all cases, and should be done at once on seeing the child, two or three times the first day and once a day afterwards. As to the medium to be employed, the day of medicated water has passed, and very properly so far as antiseptics are concerned, unless it be boric acid. Sterilized water or normal saline solution is all that is advisable, except in cases of chronic ulcerative colitis where weak astringents, such as tannic acid ten to thirty grains, or extract of witch hazel, two drachms, or nitrate of silver, five grains, to the quart may be of service. Some authorities disapprove of nitrate of silver in all cases and certainly with reason in acute cases. This kind of irrigation should be kept up for fifteen minutes or so each time, and it is sometimes of advantage to follow it by the injection of three or four ounces of a much stronger similar solution which is to be held in for a few minutes by pressing the buttocks together.

In conclusion, Mr. President and gentlemen, speaking in the cold-blooded terms of the Malthusian brotherhood who love political economy, let us remind ourselves that no province of the *Ars Medendi* is so fraught with direct benefit to the State as that which saves to the State the lives of so many little citizens useful *in posse* to the body politic. And who can estimate just what they are *in esse* to the family, or calculate the lessening of human sorrow, the saving of pain to those who are so completely at the mercy of the careless and the ignorant, though they be usually well meaning? If it be true, as Cicero says, that "In no point do men come nearer to the gods than in giving health to their fellowmen," it must be true that this point is overpassed when we can bring help to our little ones who "rule by the right divine of helplessness," as Longfellow says in the "Hanging of the Crane," so redolent, like all his work, of that domesticity which is the crown and flower of the physician's relations with the public, and which attains its fullest growth in the treatment of infantile diseases.

We cannot expect sudden success in our educative efforts, for though Minerva, the goddess of knowledge, sprang full armed from the head of Olympian Jove when Vulcan did a craniotomy upon him with his axe, miracles of knowledge are not nowadays so performed; and if this effort of mine, and the dissension which may follow, accomplish some small share in the task I have outlined, I shall feel amply rewarded.

THE POLITZER AND GRUBER CLINICS.

BY JOHN P. MORTON, M.B., I.R.C.P., HAMILTON.

These two large clinics exist side by side in the immense Vienna General Hospital, and constitute its Ear Department. Although, materially, they are separated by a wall, if viewed medically no division really exists, except in very minor details of examination and treatment. They are exclusively aural clinics, and this fact is mentioned only to contrast them with those of England and Scotland, in which ear, nose and throat work are always combined.

This Vienna centre, undoubtedly, constitutes one of the most important in the world. During the past years, many anatomical aural discoveries have originated there, and one is not surprised at this, after a glance at the large collections of carefully prepared temporal bones. Moreover, in the line of treatment, we all know how Politzer's bag has revolutionized our work. When we remember these facts and also this, that at almost any period of the year, doctors of every nationality are in attendance, we are stimulated to inquire into some of the methods of this centre, whose influence has been and is so widespread.

Simplicity is an outstanding feature of both the instruments and the methods.

We, at this distance, in thinking of these large clinics, are apt to picture many wonderful appliances used; but examination reveals the fact that these are of the simplest character, and might easily be procured by any general practitioner. No electrical apparatus is used, and such quackery as phonographs and the like are not included in their list.

Light.—In the morning sunlight is used, and in the afternoon or evening a gas lamp or an Auer light.

Specula.—Hofrath Gruber always prefers the metal specula, introduced by himself, and modified slightly in shape by Ehrhard. Hofrath Politzer employs those made of caoutchouc, claiming that the contrast between their color and that of the parts examined, aids the surgeon; and, moreover, being softer, are not so apt to produce abrasions. Their diameters in either case range from two to eight mm.

Mirrors.—Both head and hand ones are used, having a diameter of 9 c.m., and a focus of 14 c.m., and each possessing behind the mirror a lens bracket. Electric head lights are not used for this purpose.

Tuning Forks.—These range from C-² = 32 V^s, to C⁷ = 16384 V^s, the one octave being considered sufficient. In some clinics forks through seven octaves are in use. To prevent harmonics, the prongs are weighted, or their lower ends filed thin.

To determine hearing, they use (1) the watch and tuning fork when the diminution is slight. (2) Whispering and ordinary conversation tone when there is marked decrease in hearing. (3) In Politzer's clinic may be seen his own instrument, slightly modified by Hedinger and Merian. It recommends itself by always producing the same tone, which normally should be heard at 15 m., and when it is heard only 1 m. away, the hearing can be definitely expressed as $\frac{1}{15}$. Owing, however, to some inexplicable disproportion between the results obtained by it and the watch, only a relative importance is attached to it. (4) Galton's whistle is sometimes used instead of the very high and very low tuning forks.

Politzerization.—In performing this a soft rubber tip is slipped over the caoutchouc point of the bag, and is inserted into the nostril in nearly a vertical direction. Only hand pressure is used.

Catheterization.—Hard rubber catheters are prepared. Hof. Politzer draws the catheter tip over the salpingo-pharyngeal fold into the Eustachian orifice (Bonnafont's method). Hofrath Gruber turns the point inward and draws it forward until it comes against the nasal septum; he then rotates it outwards through 180 degrees (Löwenberg's method). Kramer's method is rarely employed. For contracted nostrils, smaller and differently curved catheters are used. In cases presenting much difficulty, the method of revolving the instrument to left or right around its long axis often succeeds.

Bougies.—Eustachian bougies are frequently used, silk worm-gut being favored. The results obtained, however, are not very encouraging, especially when the danger of dislocation, by striking the joint between the incus and stapes is considered. The immediate effect of bougieing is tested by auscultation, which will be referred to later. Vapors are conducted into the tympanic cavity, either by Valsalva's method, by Politzer's bag or by means of Kerr's inhaler. Vapor injections, however, are seldom employed.

Diagnosis by Tuning Fork.—Germans and Austrians are naturally diagnosticians. Delicacy in arriving at an exact diagnosis is a much more prominent feature of their work than delicacy in treatment. They delight in the most searching examinations, and the student soon learns, especially in ear troubles, never to trust to one sign, but to apply all known tests and institute a comparative study of results before giving an opinion.

Cerumen.—If the trouble is unilateral, Weber's test will show localization in affected ear; if bilateral, then in the worst ear. Rinne remains positive, except in those cases where the stopping of the ear is nearly complete. These results are reasons

for the great care taken to remove all traces of wax or matter before attempting to diagnose middle ear from nerve troubles.

Middle Ear Catarrh with Secretion.—Weber's test in a great majority of cases shows localization in affected ear, although exceptions are sometimes noticed. With little disturbance of hearing, the Rinne remains positive; whereas, with great diminution in hearing the negative result is obtained; and in the latter cases we also find a lengthening of bone conduction. The Gellé and Bing tests are not, as a rule, applicable; but the very great variations of hearing so characteristic of this affection allow of the application of all the different tests at times. If the Weber test shows any signs of being localized in the good ear, or the Rinne gives any evidence of being positive, syphilis of labyrinth is always carefully examined for, and when this is present the very important symptom of shortening of bone conduction (Schwabach) is distinctly marked.

Catarrhal Adhesive Processes in Middle Ear.—As we all know this process affords us opportunity for perhaps the most delicate work with the tuning fork. If both ears are effected, Weber's test is very indefinite and only of relative value, if unilateral it is localized in affected ear. Rinne always shows negative, and the bone conduction is generally lengthened. Of tuning forks held before ear, low ones are heard poorly, while high ones are heard very well. Such a combination of symptoms would render the diagnosis almost certain. When other tests are confirmatory, and yet Rinne remains indefinite, i.e., the tuning fork is heard as long before the ear as through the bone, then labyrinthine complications must be considered probable. The same suspicion arises when bone conduction is not lengthened or shows slight shortening. Ankylosis of the base of the stapes with the fenestra ovalis frequently presents itself in this affection, and it is just here where Gellé's test, which is so often indefinite, gives positive results, for this test depends on the movability of the stapes. A sounding tuning fork is held to the forehead, the air pressure in the meatus is then raised by means of Siegel's speculum. When the ear is in a normal condition this should lessen the sound of the tuning fork by displacing the stapes inward and rendering it less movable. If ankylosis of this bone is present, no such lessening is obtained, for it cannot be rendered less movable than it is already. In rare cases the malleus and incus are stiffened, while the stapes is comparatively free. Bing's ingenious test will prove this. Through the medium of a Eustachian catheter, an ear trumpet is connected directly with the tympanic cavity; the sound-waves are thus conducted immediately through base of stapes and membrana tympani secundaria to the labyrinthine fluids. Another trumpet is connected with the external meatus. If speech

cannot be heard through the latter source, but can easily be heard when spoken into the tube connected with the catheter, the stapes is then judged to be freely movable and the malleus and incus to be in some way stiffened. Dr. Bing has also instituted a method which aids in differentiating middle ear trouble from nerve trouble. The sounding tuning fork is placed on the mastoid process; as soon as the note ceases, the external meatus is closed with the finger, and if the sound is not again heard, middle ear disease is diagnosed. This method is only applicable to very high grades of disturbance, and is not often employed. If Corradi's test is applied under this heading, the secondary sounds described by him should be experienced. This test is considered yet as *sub judice*.

Otitis Media Suppurativa Acuta.—As one would expect, the Weber is localized in the affected ear. Rinne gives very indefinite results. Perception through the bones, as a rule, remains unaltered, although when the pain is very great, just before perforation of membrana tympani, it sometimes completely disappears.

Otitis Media Suppurativa Chronica.—The bone perception is generally normal. The Weber and Rinne tests are analogous with those found in middle ear catarrh, the Weber being localized in affected ear, and Rinne being markedly negative, except during very early stages, or when labyrinth disease complicates.

Auditory Nerve Disease.—Weber is localized in the normal ear, but is considered of no value whatever unless taken in conjunction with the other tests to be mentioned. When both sides are affected, its results are negative. Very high and very low toned tuning forks are tried before the ear, and good perception for the latter is regarded as strong evidence for labyrinth trouble. On the contrary, good perception for the high notes is considered as of no value, for so many cases of pronounced nerve trouble are experienced in which excellent perception for the highest notes is retained. Rinne's test gives a positive result, and an explanation of this rather puzzling finding may not be out of place. Normally, the perception of the tuning fork through the air is longer than through the bone. In either case the nerve is finally called into action, and when it is diseased, the air and bone conduction must suffer equally, which leaves them in the same relation to each other as in the normal condition, viz., positive Rinne. The important point, then, is not that we have a positive Rinne, for such is found in normal conditions, but that the Rinne is rendered positive by the shortening of the bone conduction. This lessened perception through the bones is the result obtained by applying Schwabach's test. A comparison is instituted between the length of the perception through the mastoid of patient and of the examiner. The

difference is measured in seconds, and the degree of nerve trouble thus arrived at.

Auscultation alone is really of no value, but when taken together with other symptoms may decide the diagnosis. It is performed in either of two ways. When done through the mastoid, and a blowing sound is perceived, Dr. Michael judges that the mastoid cells are filled with air and do not contain any pathological products. When the Eustachian canal is narrowed from any cause, or the membrana tympani perforated, no sound is heard. If these last two conditions may be excluded, and auscultation sounds are still absent, some pathological condition of the mastoid cells is diagnosed. As a rule, however, auscultation is performed directly through the external meatus by means of the interaural tube. With *perforated tympanic membrane* the sound is of a loud, penetrating character, and seems very close to the examiner's ear. The note is high or low, according to the size of the perforation and the patency of the Eustachian tube.

Sclerotic or Atrophic conditions of the middle ear and the tympanic membrane combined with a normal calibrated tube give origin to very high, sharp and vibrating sounds, which may easily be mistaken for those produced by a perforated drum. The ear manometer, however, can easily distinguish these conditions.

Secretion in the Eustachian canal and tympanum are known by the râles produced. These originate mostly in the tube, and vary according to the nature of the secretion. When râles are heard, followed by a free blowing sound, the air has been forcing its way through some secretion in the canal, and then has burst freely into the tympanum.

Narrowing of Eustachian Tube produces a high, weak sound, whose chief feature is its seeming distance from the examiner's ear. If the air does not pass the constriction at all, besides being distant and weak, the note is very low and dull.

Space will allow me no liberty to further lengthen this article. On some future occasion I may have the pleasure of continuing it, and dealing with treatment and operations. Permit me to conclude by heartily recommending either the Politzer or Gruber clinic to anyone wishing to engage in special aural work abroad.

Society Reports.

CANADIAN MEDICAL ASSOCIATION.

The thirty-second annual meeting of this Association was held in the theatre of the Normal School building, Toronto, on August 30th, 31st, and September 1st, 1899. Mr. Irving H. Cameron, Toronto, the President of the Association in the chair, and Dr. F. N. G. Starr, acting as General Secretary. The meeting was called to order by the President at 10.30 a.m., and the minutes of the last meeting, at Quebec, were read and adopted. About eighty members were present for the first session, which numbers were swelled to about 275 before the completion of the meeting.

Dr. A. J. Johnson, Toronto, the Chairman of the Committee on Arrangements, submitted his report for the guidance of the members, which, on motion, was received and adopted.

The General Secretary then read telegrams of regret from Dr. J. M. Beausoleil, Montreal, and Dr. E. A. Farrell, Halifax; also from Dr. A. Lapthorn Smith, Montreal, stating that he was unable to be present on account of the death of his daughter.

The President informed the meeting that he had already despatched a letter of sympathy to Dr. Smith.

Tuberculosis in Canadian Cattle and Its Prevention.

Dr. J. George Adami (Montreal).

At the outset, he stated that there were three questions to be asked and answered: (1) Is tuberculosis in cattle a source of danger to other cattle, so as to seriously affect their well-being and to be a source of loss to the owners? (2) If infectious from animal to animal, is it infectious from animal to man, and thereby a grave source of danger to the human race? (3) If infectious from animal to man, what are the commonest modes of infection, and as a sequel to this, how are we to diminish the danger?

If the first can be answered in the affirmative, how can the disease be erased? To do this we should employ all the means in our power. What organization and official steps should be taken in our country to stamp it out? In regard to the question: Is it dangerous to other cattle when in cattle, there is abundant evidence to show that the introduction of an infected bull into a herd has been followed in a short time by symptoms of the disease in old members of the herd. We can thoroughly rely upon the tuberculin test. In Germany, they

have come to the conclusion that the amount of tuberculosis is over fifty per cent. of the animals in the land. Stringent regulations should be carried out by the Government. The animal should be seen before permitted to enter Canada. If once an animal has been inoculated with tuberculin, you will not get a secondary reaction until a month has elapsed. What are the results and dangers from this extreme prevalence of the disease elsewhere? First, the effects upon the animal itself, milk, breeding, etc.; sooner or later the disease progresses. Second, there is danger to the community in employing the milk and meat of such an animal. In regard to his second question, If infectious from animal to animals, is it infectious from animal to man? we generally give an affirmative answer to this. The amount of reliable evidence of direct transmission from animal to man is singularly slight. It would be easy to determine this if we could make a direct experiment; but we cannot do that. We cannot inoculate man from the deceased meat. We can do the other, though, i.e., inoculate cattle from the sputum, and we find that they are slightly susceptible to human tubercle. That obtained from man, however, tends to be localized and leads to transient results. Even in butchers and children fed upon the meat and milk of tuberculous cattle, there is lack of positive evidence. In them, we must exclude every other possible mode of infection, and such exclusion is a matter of extreme difficulty. Thus, to obtain any authentic case is a matter of great difficulty. The frequency of tubercle amongst children would appear to be a strong argument in favor of believing that the milk of cows affords the most likely source of infection. The mortality from tubercle in early childhood is not decreasing, and the opinion that the prevalence is due to infection from milk from tuberculous cows seems to be well-founded. In 1890, the testing of cattle was encouraged to the utmost possible extent by the Government. In 90,000 inspected cattle at Montreal in 1894, only eighty were rejected, and only two of these were recognized as suffering from tuberculosis, and even in them the disease was only limited. Pleuro-pneumonia is absolutely non-existent in Canada. Out of 2,000 post mortems at Montreal, there were only fourteen cases in which tubercle were detected in the lungs, i.e., 0.06 per cent. He advocated the appointment of inspectors to kill off or buy and place on Government reserves all infected cattle, and then in a very few years Canada will become practically free from the disease, and become a great centre for the breeding of high-class cattle, and other countries will have to come to us for their stock.

Dr. J. J. McKenzie, Bacteriologist to Ontario Board of Health, spoke of the effect of climate in reducing the amount of

tuberculosis among our cattle, and stated that our climate is favorable for this. The difficulty is that the cattle that ought to have the benefits of the climate, in winter time as well as summer, are shut up and housed in small stables in which every breath of fresh air is kept out, as their owners think more of keeping them warm. As to the presence of tubercle bacilli in the milk, some six years ago, he investigated some twenty-five cattle that reacted to the tuberculin test. He examined the milk of all these cows, using the specimen after passing through the separator, and in only two cases were there any bacilli present, and in these two cases he only found six or eight bacilli in the whole specimen, and in the post mortem afterwards, they were unable to find any tuberculosis in the udders.

Dr. Clarence Starr (Toronto) stated that in the fall of 1897, he had done some experimental work for the Ontario Government along the same line, and it was then the intention of the Minister to introduce the Bangs' system. Statistics taken from cattle for export are not fair. Those are cattle taken from the herd, and free from disease as far as possible. The Dominion Government some time before that referred to, had passed an Order-in-Council recommending that all cattle reacting to the tuberculin test should be slaughtered. That, of course, put a stop to the hunting of statistics, on account of the fact that the farmers would only suppress it if it were in their herds. All cattle imported into this country should have a certificate of freedom from tuberculosis by means of the tuberculin test, given by the breeder, and no cattle should be imported into this country unless such has been done.

Dr. Turnbull (Pennsylvania) said he had listened with a great deal of pleasure to the able paper of Professor Adami, and thoroughly agreed with the writer in making a long period of quarantine for animals imported. In Pennsylvania, recently, a law was enacted (within the past two years), that breeders within the state are not to bring into the state, any animals for dairy or breeding purposes unless they have been tested for tubercle by the health authorities from the state in which they were bought. It was an excellent law; but the law was not stringent enough, in that the breeders had got on to the fact, that if an animal reacts to tuberculin, a period has to elapse before it will react again, and a great many of the breeders are unscrupulous enough to keep injecting their animals with tuberculin. He was in favor of a seven weeks, quarantine period; or longer should be better. Make the quarantine period just as long as you can. It is better for your breeders.

Dr. P. H. Bryce (Toronto), Secretary of the Provincial Board

of Health, spoke of the powers bestowed on health boards by the Ontario Government in 1896, and said that the regulations were practically those of Bangs.

Dr. Roddick (Montreal) said that veterinary surgeons should alone be allowed to use tuberculin upon cattle before they were sold. We have several illustrations in the Island of Montreal, where a farmer is known to have injected his cattle, sold them to a gentleman farmer, and all of those cattle turned out to be tuberculous, reacting later on to the tuberculin test. In some stables there is only 200 feet of air space where there should be 2,000 feet of air space. Then, care is not taken to cleanse the stable as it should be done. He promises, upon some future occasion, to bring the matter up in Parliament, as he wants the Government to take a stronger hand in this matter. He has the promise of the Minister of Agriculture that he will discuss the question of the Bangs' System, and the slaughtering of the animals, in order to eradicate this terrible disease from among our cattle.

Professor Adami, in reply, said in regard to Dr. Mackenzie's interesting experiments, one can find, absolutely, tubercle in the milk and no tuberculosis in the udders; but one does find fibrosis of the glands, but no sign of tubercle in the glands. As to the question of quarantine, the Government of Canada has made regulations to the effect that in cattle imported from England a certificate shall be brought in regard to the tuberculin test with them. The tuberculin test can be employed by those willing to employ it fraudulently. He advocated the adoption of the Bangs' system, and felt assured that in three or four years we can get rid of tuberculosis, at any rate aid it by a more extensive slaughter than in the old country.

The Results Already Achieved at the Gravenhurst Sanitarium.

Dr. J. H. Elliott, Medical Superintendent of that institution, reported on this subject. In his classification of cases when admitted, he had followed the methods of Trudeau: "incipient," "advanced," and "far advanced." On discharge, they are classified as: "apparently cured," "disease arrested," "improved," "stationary," "failed," or "died." "Apparently cured" signifies absolute absence for three months of any expectoration. "Disease arrested" cases in which bacilli are still present, but all constitutional disturbance gone for some time. "Improved" are cases in which there has been some marked improvement in the condition of the lung. The first year's report shows that 116 were admitted during the first year. Of these, 33 remained at the close of the year, 83 having been discharged. There were 12 "apparently cured": 23 "disease arrested"; 29 "marked improved": 11 "unimproved"; 5 "failed," and 3 died. The

average stay of each patient was 98 days. Making a selection of 30 patients in three months, 6 being "incipient" cases, 16 "advanced," and 8 "far advanced." Of the 30, 22 gained in weight, 4 lost weight, and 4 neither gained nor lost. One patient in four months gained $41\frac{1}{2}$ lbs. These results were obtained while the sanitarium was undergoing development. The sanitarium year ends on the 30th of September. Taking the first nine months of the year, ending at the 30th of June, of 17 "incipient" cases, 11 were "apparently cured," 6 "improved," or "disease arrested"; none "stationary"; none "failed," and none died. There were three cases of doubtful evidence of phthisis, one was "much improved," and two "apparently cured." The average stay was 152 days. Of the 72 cases discharged, 61 had bacilli when admitted, and 47 had bacilli when discharged. Of the 72 cases, 60, or 83 per cent., gained in weight. One patient gained 18 lbs. in the first month. He drew especial attention to the fact that of 17 "incipient" cases, 11, or 65 per cent., were "apparently cured." With a longer stay 80 per cent. could be got. From 12 to 18 months have elapsed since the discharge of the patients of the first year. Twelve were reported "cured," and in none of these has there been any return of the trouble, and all are in perfect health.

Dr. Powell (Ottawa) asked what important advances have been made by separating cases of phthisis from the general community and putting them under proper conditions, i.e., those cases of incipient phthisis? Then he would like to know, broadly, on what the diagnosis was based, in order to place them in that class? In every case was it based upon the sputum, or to what extent on the clinical symptoms given, in order to say, was the person in the tuberculous state at all?

Dr. N. A. Powell (Toronto) stated that Dr. Stewart (Montreal), and himself, had been responsible for a large proportion of the diagnoses in these cases. The examinations have been checked over by the late Dr. J. E. Graham and Dr. J. L. Davison. Since the death of Dr. Graham, Dr. W. Britton, Toronto, has been appointed on the staff. It was quite proper to place them under treatment before bacilli could be found in the sputum. There must be a breaking down of the lung tissue before you can get the bacilli. Bacteriological examinations are always made, and made repeatedly. He stated that he had to accept the responsibility for there being at the present time a sanitarium at Gravenhurst. There is no desire that there should be any financial return. There are no salaries, excepting to the superintendent.

Dr. Elliott, in reply, stated the tuberculin test has not been used. The rate is \$6.00 per week for all patients. The Ontario Government gives us help to some extent as other hospitals.

We get our share of the \$110,000 grant, the total grant for the year being about \$1,900. Each patient has a separate room ; two patients are not crowded together into one room. There are two double rooms only. All the expectoration is collected either in a box or in a handkerchief and is destroyed by fire. Last year there was a deficit which was not met.

FIRST DAY—AFTERNOON SESSION.

“Christian Science.”

Prof. J. H. Richardson, Toronto University, stated that when it was suggested that he should read a paper on this subject, he willingly consented, not because the subject was worth five minutes' talk, but because we should have a more definite knowledge of it. It received its name in 1876, and was a conglomeration of spiritualism, homeopathy, mesmerism, deceit and avarice. In 1862, Mrs. Eddy, then Mrs. Patterson—she has had four husbands—had been a helpless invalid for six years, though the illness is not stated. She then came under the care of a Doctor Quinbe, who, unlike all medical practitioners, made no outward applications, simply sitting by the patients and talking to them about the disease. This man said : “I change the fluids of his system, and establish the principle of his health.” In that same year Mrs. Eddy met with an accident which brought back her old disease. In 1866 she again received “the treatment,” and her friends were frightened at her being restored to health. Such was the commencement of this so-called “Christian Science.” In the opinion of the essayist Eddypathy was “ridiculous muss.”

President's Address.

Mr. I. H. Cameron first expressed his thanks at the honor conferred on him, and then thanked the members of the Association for their unprecedented attendance at the meeting. “The burden of my lament to-day is the overcrowding of our ranks, and the absence of scholarship in the profession.” To cite an illustration: It was formerly considered that 1,000 souls were enough to keep one doctor alive ; now in the city of Toronto there are over 400 doctors to a population of 200,000, and other cities will reveal like conditions. There is no profession that tries to be more honest. There are those who should not be in the profession at all, being better fitted for other walks of life. One told him that he just wanted money, and that he did not care anything about the profession. Another fault is, no doubt, the growth of specialism. He deplored the fact that the old-fashioned practitioner is dying out, the decadence of the doctor's horse and the introduction of the automobile. Defect

in scholarship and manners came in for notice; the pupil no longer meets his master with terms of respect, but on terms of equality. He quoted Mitchell Banks again in regard to lack of scholarship. There was eternal cramming and loss of power of thinking. What is the remedy? Stiffen up entrance examinations. We should have this rough sieve at the very beginning. It was a great mistake to allow inferior men to enter upon a course of studies, as after matriculation they usually got through somehow, even though they took separate subjects for a period of ten years. He outlined the course of studies according to his light, and stated that the course should conclude with three years' clinical experience. The diminution of the ranks of the Association by the departure to the silent majority of Drs. J. E. Graham, Toronto; H. P. Wright, Ottawa; and J. H. Mullin, Hamilton, was feelingly referred to. In concluding his admirable address, he referred to the high honor conferred on the profession of medicine, when Her Majesty bestowed the honor of knighthood upon three members of the profession in England, Burdon Sanderson, Michael Foster, and Mitchell Banks.

An Experience with Formaldehyde Disinfection.

Dr. F. Montizambert, Director-General of Public Health, Ottawa, related an experience with the employment of this disinfectant in an outbreak of small-pox on board the steamship *Lake Huron*, twenty-five days out from port on the Black Sea, with 2,400 Doukhobors on board. Formaldehyde in solution was used for the saloons and staterooms, and in all parts where the fittings would be destroyed by steam. Steam is not suitable for large rooms, as the temperature cannot be kept up. Formaldehyde, therefore, was used on this occasion, and the total measurement of surface on which it was employed was 200,000-feet odd. Twelve ounces of this solution was allowed for each 1,000 cubic feet of space. Two new sets of men paraded, occupied, lived and slept in the vessel from two to four days after seventeen cases of small-pox had been removed, and there were 2,400 people on board. That was a severe test. He was happy to be able to state that there has not been reported a subsequent case of the disease during two and one-half months that have since elapsed.

Massage and the Relief of Eye Strain in the Treatment of Glaucoma.

Dr. George M. Gould (Philadelphia) stated that glaucoma will first come into the hands of the general practitioner for treatment. Four years ago he wrote concerning glaucoma, that massage properly applied would seem to be a good process,

stimulating and arousing normal functions generally. During the last four years he has tried the same plan in a number of cases, and then proceeded to relate his experience and results. In the first case there were typical symptoms of glaucoma, with the exception of pain. Tension, right plus, 1; left plus, 2. Massage was employed, and for three years the eyes have remained normal. In the second case, massage also was performed, and the vision remains perfect, and the tension perfectly normal, now, for three years. By this treatment all venous and lymph spaces with stasis, are cleared and broken. Massage may be of great service, especially if seen early. In many cases it may prevent enucleation, and in sub-acute attacks it is invaluable, and is promptly prophylactic as well as therapeutic.

Dr. R. A. Reeve said that glaucoma is such an insidious and dangerous disease that one hails with pleasure any new treatment or anything looking towards prophylaxis. This exerts beneficial results in this disease, and, fortunately, it is a very rare disease. He congratulated Dr. Gould upon the wisdom he displayed in laying such great stress on the scientific correction of errors of refraction.

Treatment of Acute Digestive Disorders of Infancy.

Dr. A. R. Gordon (Toronto). We should begin our treatment with the suspension of all the regular articles of diet and the employment of substitutes, and if the attack is in the stomach, the reason for this is all the more pronounced. Withholding of foods must be absolute, from eight to ten, or twelve, or even twenty-four hours, with the administration of water alone. In the simpler forms suppression of food may be all that is necessary for a few hours. After this, rice water, etc., may be used. Liquid peptonoids he has found very satisfactory. It may be necessary to persist in the use of this diet for days, until all the symptoms have disappeared, and the child is practically convalescent. Cow's milk should be the very last to be allowed. Some of the malted foods answer very well at first. When milk is to be allowed, it is safer to peptonize it, although sterilized milk is sometimes more easily borne. Purgation and repeated purgation is indicated at the commencement of an attack. Calomel is the best drug to employ with soda bicarb. to prevent griping, in divided doses when vomiting is troublesome. Castor oil is safe and effectual and soothing. If vomited, a second dose ought to be administered at once; a child rarely vomits the second dose. During convalescence the aromatic syrup of rhubarb or the phosphate of soda is satisfactory. Daily purging should be continued with these remedies until the temperature falls to normal or nearly so, and until the offensiveness of the discharge ceases. Initial doses of calomel and

castor oil have the effect of bringing away matter which has been lodged in some crypt or recess of the bowel. We may feel safe when we see the characteristic calomel stool. In regard to flushing, warm water with sufficient salt added should be employed, and if vomiting be present, that is no contra-indication. It serves for the purpose of lavage, and should be used except in the continued vomiting of acute gastritis. Water and normal saline solution per rectum is even more important, and should be used in all cases. The quantity should be large, and used three or four times daily, and the temperature of the water should be about the normal body temperature. As to sedatives, they are local and general. Bismuth and opium, the former used in large doses; two drs. in twenty-four hours are the best. Opium should be used to allay excitement, to remove pain, and to control peristalsis; but it is unfortunate if it is required before the bowel is cleansed. While the temperature remains high, its use should be restricted. It should be used separately, and is contra-indicated in cases where there is any cerebral excitement. Dr. Gordon said he was skeptical of antiseptics. The extent of surface and the poison to be neutralized is great: but after the affected surface is cleansed, they may then prevent putrefaction and irritation of the membrane. If used, they should be given in the food or after it. Asepsis should be secured to prevent decomposition. In the administration of antiseptics in the late stages, much benefit may be had from them, especially HCl. Astringents should never be used.

Dr. Benedict (Buffalo) said that he was very skeptical of such remedies as antiseptics. If the bowel is full of fecal contents, it is a difficult matter to ascertain whether they are any good or not; but following the purgation after the fecal mass has passed through the bowel antiseptics can be used, and then you will find them valuable.

Dr. Holmes (Chatham, Ont.) spoke of hydrotherapy, putting the child in the cold bath. Remember, it is through some error in diet that the child begins to vomit; the bowels move frequently; sunken eyes and depressed fontanelle can be observed. The condition of that child will be that its hands and feet are cold and blue, and if the temperature be taken in the rectum you will find it 103 to 106 degrees. You can reduce this temperature by the cold bath and then administer the calomel and the castor oil, and that may be all the treatment necessary.

Dr. Gordon, in reply, said that small doses of paregoric are of great benefit, still one should be very guarded in the use of opium in these cases. In regard to the cold bath, he states that he invariably resorts to the use of the cold sponging and lumps of ice to the spine.

A Case of Subcutaneous Emphysema.

Dr. Fred Fenton (Toronto) exhibited a specimen of tubercle in the lung of a child six months old. The child was described to him as having been well until it had reached the age of five months, except for an attack of bronchitis at the third month. On December 23rd last, five days before death, the baby was very restless, but there was no cough to any degree; in fact, it was not a marked feature at any time. Swelling was noticed in the greater part of the neck, chest and shoulders, passing upwards over the head so that you could see a large projection over the vertex, and then spread downwards over the chest and abdomen. It was limited to the neck behind. Over the parotid region it advanced upwards, spreading forwards over the cheeks. Passing down the chest-wall in front, it became limited at the lower border of the pectoral majors. It passed forwards and backwards to the spine, and downwards to the crest of the ilium and over the inner half of Poupart's ligaments it escaped. It also spread down the arms to about half-way to the elbow. Microscopic examination of the tissues determined tubercle bacilli in the lungs, a few in the liver and spleen and none in the kidneys. The father, a man of fifty, has suffered from winter cough for years, because of chronic bronchitis. No direct evidence of tuberculosis was obtained in the mother, but she is poorly nourished and looks a fit subject for the disease. The production of emphysema is usually ascribed to prolonged and violent coughing; but this was never a feature of the case. The question of infection arises, and the history of the whole case points very strongly to such an origin. The presence of tubercle bacilli in the father's sputum is quite ample to account for the child's infection.

Iritis.—The Successful Treatment of Three Important Cases by the Combined Form of Treatment.

Dr. G. H. Burnham (Toronto) spoke of the different forms of iritis with paralysis of the third nerve from specific disease, and the great value of the combined form of treatment. These cases often led to total destruction of vision in the eye, and he used this treatment for the sole purpose of putting a stop to relapses. Several cases were cited and then the doctor detailed his plan of treatment. Filocarpine was given hypodermically, the dose being one-tenth to one-fourth of a grain at each injection. This is administered in a series of sittings of from ten to fourteen injections, given once a day as a rule. The interval between the series ranges from three to eight weeks, during which time the patient is taking the iodide of potash and the bichloride of mercury internally. Then another series

of injections is begun. Before each injection the patient is prepared in a room with a temperature of seventy-five degrees, lying between flannel blankets, and lies on the left or right side, as convenient. If he feels chilly and uneasy, the effect is lessened. In winter, Dr. Burnham uses a hot water bottle to the feet. The proper effect of the injection is shown by the perspiration and a free flow of saliva, the latter varying from six ounces to a pint. At the end of an hour the patient gets up and dresses. Two hours afterwards he can take his food. The injection is usually given about two hours after the mid-day meal. The iodide and mercury must be given regularly between the series. As to the length of time consumed in this treatment, in some a few months will suffice : in others it is continued for three or four years, and no relapses occur in this treatment.

Best Method of Dealing with the Consumptive Poor.

Dr. E. J. Barrick (Toronto) spoke first on the establishment and maintenance of rural sanitaria in connection with the municipality or with a group of municipalities. Then the erection and maintenance, in connection with the above, of suitable buildings for the reception and treatment of such advanced cases of the disease as are unsuitable for treatment, was contended for; and, lastly, the co-operation of the Dominion Government, provincial legislatures, municipalities, and philanthropic and charitable individuals in providing funds therefor, should be secured.

Dr. Britton (Toronto) thought that a great many of the hospitals of the province should receive and care for these patients in a proper manner. It would be much better if the hospitals did this work instead of building sanitaria for these advanced cases.

SECOND DAY--MORNING SESSION.

Skin Clinic at St. Michael's Hospital.

The skin clinic at St. Michael's Hospital was an important feature of the meeting. There were about thirty cases shown, and amongst them were several rare skin diseases, such as dermatitis herpetiformis, larva migrans, urticaria pigmentosa, hydrocystoma, hydadenitis, favus, molluscum contagiosum, exfoliative dermatitis following psoriasis. Drs. A. R. Robinson, New York ; Shepherd, Montreal ; Graham Chambers and A. McPhedran, Toronto, took part in the discussion.

Erysipelas, with Treatment by Marmoreck's Serum.

Dr. A. de Martigny (Montreal).

In opening this paper, Dr. de Martigny said that he had occasion to try, during the last fourteen or fifteen months, this treat-

ment in cases of erysipelas of the face, and the result was very good, as a rule; but the result, also, is generally very good by the ordinary treatment. One case in particular was noted, in which for four or five days tonic treatment with iron and quinine had been tried, and a thirty per cent. solution of ichthyol applied to the face, without any good result. The temperature was 105° and the pulse 148, the patient very weak and the face very much swollen. There was also very much suffering from headache, trembling and fainting fits all the time; 20 c.c. of the antitoxin (Marmoreck's serum) were injected. She was then put to bed and a solution of bichloride, 1:4000 applied to the face. On the next morning the temperature was normal and the pulse 96, and the pulse was normal on the following days. In five days she could go back to work, though the face was still darkened in some places. He believes this treatment is more powerful in its curative power than the local applications. If we use the treatment as soon as we do for diphtheria, *i.e.*, on the first day, we would get as good results as from antitoxin in diphtheria. This is not a very severe affection, but we sometimes see deaths occurring from erysipelas of the face. Some friends in Montreal stated that we had two cases of death. In the first case, not reduced by the ordinary treatment, it would not have been cured by that treatment as quickly as if the old treatment had been continued. He was satisfied with the results, and asked the members of the Association to try this treatment when they had a case of erysipelas of the face, and report at the next meeting of the Association, twelve months hence.

Dr. R. W. Powell (Ottawa) asked the writer of the paper about the dose of this particular serum, whether 20 c.c. was the standard dose or whether the dose is altered by the severity of the case, or by the age of the patient, or what rules there are about this treatment.

Mr. Cameron confirmed Dr. de Martigny's findings. He had employed the treatment lately in four or five cases of erysipelas of the face with very prompt results. One patient, in particular, had seven attacks or relapses in fourteen months, and since using this serum injection, no relapses have occurred.

Sir James Grant (Ottawa) stated that when this society was organized thirty-two years ago, this subject was not even in its infancy. Since then great advances have been made, and the observations which have fallen from this gentleman upon this treatment is one of vast importance and such is the efficacy of the injection, in curtailing or destroying the poisonous condition of the system that produced the erysipelas, that it was almost positive in its character. He trusted that Dr. de Martigny would continue in his observations, and throw more light upon the subject.

Dr. Irwin (Weston, Ontario) believed in serum-therapy, but it will not cure all cases.

Dr. de Martigny, in reply, said you can use 10 or 20 c.c.; but we must know that the streptococci are not all of the same kind. There are different families of the streptococcus. It acts on a special family very powerfully. If of the same nature, we can use very small doses with good results; but the serum is prepared from one family, and thus we must use large doses to have any good effects. Besides that, we must be sure when we employ serum that we use a very powerful one. If we find the streptococcus in the beginning, we find the enemy itself. If we wait too long, then we come in too late, and then, if we kill the microbe, we have no reason to hope to have any effect upon the toxine itself, only that it must be eliminated by the natural ways—the kidneys, skin, etc.

Complications and Treatment of Fracture of the Skull.

Dr. J. H. Elder (Montreal) read this paper and stated that it referred to fractures at the base. This last summer he had under his care in the Montreal General Hospital, a remarkable series of these fractures, no fewer than seven all told, five of them being there at the same time. The history of one case: M. S., aged eight years, came into the hospital on 30th May last, unconscious, the result of a fall of fifteen feet, striking on the head. There was a large hematoma about the parietal bone and a depressed fracture above the left ear; pupils widely dilated; blood issuing from nose and ears, pulse weak, respiration shallow. Vomiting of bright, red blood in small quantities. Examination of the throat with mirror showed the blood dropping down from the pharynx. There was a fracture through the middle fossa of the skull, involving both ear and nasal fossæ. Something had to be done at once. He quoted Shepherd's case, where he ligated the common carotid artery. He then ligated the left common carotid artery in this case and put the patient to bed. She regained consciousness on the third day and the temperature kept fairly good, but on the twelfth day, she developed thrombosis in the superior longitudinal sinus, with œdema along the forehead. On the sixteenth day another rise of temperature and thrombosis of the left cavernous sinus, followed in a day or two by thrombosis of the right cavernous sinus. She left the hospital perfectly well in twenty-six days, and continues well. The other six cases are pretty much of the same nature. In all the cases the following general plan of treatment was followed out: First, absolute rest in bed; secondly, quiet was enjoined, and the patient should be kept preferably in a dark room; thirdly, the ice pack was kept to the head continually; and, fourthly, the ears were thoroughly syringed out and packed.

with sterilized gauze. The nose was sprayed every four hours with following solution: borate of soda and sod. bicarb., of each 3 grains; glycerine and water 1 ounce. The mouth was cleansed every two hours with solution of 45 grs. chlorate of potash, 20 minimis HCl., 4 drs. glycerine in 10 ounces of water. Food was given per rectum for several days. Peptonized beef and brandy was well borne, when given in this way. Opium is indicated if the patient is violent. It quiets him. Above all, keep the patient free from all excitement, whether of sight, sound or mental production. Exclude the pettifogging lawyer, who is so anxious to have the case.

Dr. Lett (Guelph, Ont.) asked how long it was from the time the common carotid artery was tied before symptoms occurred; because it strikes him that in many of these cases of injury to the skull, that the injury itself, while it leaves no symptoms for a short time from the result of healing, the impinging of the membranes on the cortical substance, that years after the patient will get mental troubles, whereas there are no mental troubles during the acute stages of the injury; and he would like to know if it was a short time or a considerable interval that elapsed before the mental symptoms appeared?

Dr. Harrison (Selkirk, Ont.) stated that he was going to ask the same question that Dr. Lett asked. He has seen cases in which injury of the bones of the skull occurred and there was no ligation of the carotid artery and in which there was perfect restoration to health; but, over a year afterwards, these symptoms supervened.

Mr. Cameron has tied the common carotid artery on both sides, and no mental symptoms followed. The mental symptoms are due probably to the traumatism.

Dr. Shepherd (Montreal) stated that his case, which Dr. Elder referred to, was a case of ordinary hemorrhage, which came on after the accident, with gradual loss of consciousness, and then he operated and found a large clot at the base of the skull. The hemorrhage was so profuse that he tied the common carotid immediately. There were no mental symptoms afterwards in this case.

Dr. Elder stated that he understood that Dr. Shepherd's case had developed mental symptoms just very recently.

Dr. Atherton (Fredericton, N.B.) stated that he had the good fortune to see the carotid artery tied on a medical man of St. John, N.B., and no mental symptoms followed, and if any of the gentlemen present heard this doctor speak on a medical or political topic, he would conclude that his mental faculties were all right.

Dr. Bell (Montreal) spoke of this modern view of treating

these cases, and thought that certainly many cases can be relieved by prompt interference, and such treatment as in other cases prevents sepsis. With regard to the later consequences, we cannot do much to avert these at all. These are produced at the time of the fracture, and he cannot see that we can really do anything to avert these. Do not let the patient die of hemorrhage nor of sepsis. The great point is to know when to interfere and to interfere promptly.

Dr. Elder, in reply, said in regard to the question of mental symptoms, he possibly might be in error about Dr. Shepherd's case, although he had heard that Dr. Shepherd's patient had gone insane. His own opinion is that it is not likely to lead to any bad results. In children we may reasonably hope for better results. In regard to the mental symptoms following fracture, that they do supervene there is not much doubt. Adhesions form between the meninges of the brain and will lead to convulsions and to paralytic seizures. Some of these symptoms supervene two years after the injury: and it is our duty to watch and see if there is any connection between the two. The reason the left carotid was taken was because the injury was on the left side.

Observations on Adenoids and Enlarged Tonsils and their Removal, with Notes.

Dr. D. J. Gibb Wishart (Toronto) said that the cases occurred in the service of the Hospital for Sick Children and thought that few practitioners have a due conception of the enlargements of these lymphoid tissues. The cases occurred in the years from 1896 to 1899, and the total number of cases operated upon was one hundred and three. Of these, forty-seven were males, and fifty-six females. The faucial tonsils alone were enlarged in sixteen females, adenoids in fourteen females. Twenty-four per cent. were under five years of age; twenty-four per cent. were over ten years, and fifty-two per cent. between five and ten years. He examined some of these some years after the operations: but in only sixteen cases could he get an examination, and only four of these showed any return of the disease. There were five cases that had been previously operated on by other operators; then there were two deaths, both due and traceable to the anesthetic. These figures emphasize the fact that the disease is very prevalent. As adenoids are concealed from view, they very often escape notice. In the diagnosis of these, he found the facial expression most useful; the nose is flattened between the eyes. If the nose is well-formed and adenoids are present, the obstruction is only partial. The presence of the open mouth or the constant keeping of the lips slightly apart, when the child is in repose, is also important. In the examination of the

pharynx, the soft palate often presents the appearance of paresis, as if pressure were on the upper surface. Actual sight, however, is the best means of diagnosis. If you fail after the first time with the mirror it is useless to try again, because the child is frightened and force employed means that hereafter you cannot get its consent. Never hurt the child if at all possible. Don't use the bivalve speculum; the trained eye may be assisted by the use of a long angular probe; enlargement of the faucial tonsil is, as a rule, easily seen. The tongue should be depressed in such a way as to prevent gagging, and it can be only brought into view when the tongue is deeply depressed. A good transmitted light should be employed. When enlargement of one or other of the glands exist, it is generally wise to attempt to reduce the condition by astringent sprays and tonic treatment. Every case requires careful consideration of all details. Don't advocate that every tonsil be removed by the knife if it protrude beyond the faucial pillars. When an operation is deemed needful, it should certainly be performed under anesthesia, and the anesthesia should be sufficiently profound to permit examination. In the simple cases, he has used nitrous oxide; but the time limit is too short as a rule—forty to fifty seconds—to secure thorough work. With regard to the position of the patient, the head should be allowed to fall over the end of the table after the tonsils are removed, and then the adenoids taken out. Severe hemorrhage following operation has been reported; but in cases of my own no such hemorrhage gave rise to any alarming symptoms. We might, however, meet with this at any time, because we do not know when an artery may be misplaced: in most cases, however, the loss of blood is very considerable. Out of the total number operated on, two resulted fatally; but in neither of these could the death be due to the operation. In eighty-five per cent. of the cases, no subsequent history has been obtained, so the percentage of cures would be over ninety. As a rule when a cure has not been obtained, the Doctor feels convinced that there must have been some defect in the operation. He removes the left tonsil better than the right: and a small portion of the adenoid enlargement may easily escape attention. The healing process will be slow, and in most which remain will continue large and take on new growth. The use of the spray to cleanse the parts should always be insisted on. The tonic effect upon the patient, the results of operation are always striking.

Dr. Snider (Brussels, Ont.) asked whether the administration of an anesthetic was more dangerous in these operations for the removal of tonsils and adenoids than in other cases.

Dr. Wishart—One has difficulty in knowing beforehand how long a time it will take to remove the adenoids, and they may prove troublesome; and then, again, they may come out in one

entire mass. The forty-five or fifty seconds which the gas gives you will be amply sufficient for the work; but if for any reason you are not satisfied with the thoroughness of your operation, you are put in the position that the patient is bleeding and out of the anaesthetic, and you don't get as good results. With regard to the danger of the anaesthetic, of course it is certainly true that a patient suffering from these takes the anaesthetic badly; but that is not a sufficient reason to prevent one using the anaesthetic, if you are thereby going to secure a much more thorough operation. So far as the effects upon the patient who died under chloroform are concerned, it did not seem to be in any way due to the operation. The patient had taken it on two or three other occasions, but in this case the patient collapsed.

Dr. Ernest Hall (Toronto) spoke of the change in the mentality of these patients after operations.

Sir William Hingston—With regard to adenoids, it occurs to him that as soon as we recognise these growths, we should operate on them as soon as possible for their removal. There is nothing to be gained by waiting; but in the case of the tonsils it is entirely different. Some operate there altogether too frequently. He stated he had seen whole families with enlarged tonsils, and when they grew older they came down to their normal condition. He has seen the tonsils almost meeting, and yet has hesitated to remove them. He took exception to the use of the spray after the operation, and would ask what can be gained by the use of the spray. The membrane of the nose is unaccustomed to it. For years he has not used water, medicated in any shape, to get at the nasal cavities; instead, he uses powders. He considered the employment of the nitrous oxide gas in these cases useless as there was insufficient time for the operation. He is most favorable to chloroform, and does not think it is more dangerous than in any other case. We have got to see that the blood does not get down into the breathing apparatus.

Dr. Wishart said that he did not mean to infer that the tonsils should be removed in every case; it is simply a matter of judgment how far they are interfering with the breathing. With regard to Dr. Hall's remarks, with reference to the clearing up of the mental condition, every surgeon knows that there is always a marked improvement after these operations, especially after adenoids have been removed.

Tuberculosis and Insurance.

Dr. John Hunter (Toronto) discussed the effects of family history of tuberculosis and its bearing upon applicants for life insurance. Of course there can be no two opinions about it,

that it is the first and imperative duty of the physician to make an honest examination of the applicant for the medical director of the insurance company; it is due the applicant as well that he should receive the benefit of the advanced medical knowledge of the day. The purport of the paper was to invite discussion that might be used to define more clearly where we are at with reference to the relationship between tuberculosis and insurance. The direct transmission of the tubercle through parental channels is of very rare occurrence. He quoted Dr. Bryce, who had made the statement that 80 per cent. of all deaths from tuberculosis occurred amongst working classes, or in those working at trades.

Dr. Benedict (Buffalo) thought that the heredity of tuberculosis was very much like the heredity of scarlet fever; that it was a question rather of infection, but with a longer period of incubation.

Sir William Hingston thought that the idea of heredity had done an enormous evil to society. For instance, a beautiful young girl is about to be married, a whisper goes round that the disease may be transmitted—the marriage is cancelled thereby.

Sir James Grant advocated the formation of a National Society like that promulgated by Sir William Broadbent in England, and presided over by H.R.H. the Prince of Wales.

Dr. Bryce thought that if this Association could form a society to assist the Government of the country, it would be accomplishing much. The Government of Ontario ought to have inspectors in the various institutions of our country, in order to see if there is a solitary case of tuberculosis, either among the teachers or students, and have such individual removed. Another point in regard to the sale of milk—licenses ought not to be granted to milk dealers until their cattle and premises have been thoroughly inspected.

Cyst of Broad Ligament.

Dr. Chas. Smith (Orangeville) reported this case, and described the difficulties encountered in the removal of the tumor. At the time of the operation the woman was 53 years of age, and the mother of nine children. She had been growing in girth for some years, but thought that she was getting fat only. Increasing dyspnoea, however, soon rendered her life intolerable; then she decided to have the operation performed. The appearance of the growth was a bluish vascular-looking tumor. There was no secondary growth. An incision five inches in length was used, and even then there was a considerable difficulty in performing the operation properly. An uninterrupted recovery took place, and the patient enjoyed good health until her death from apoplexy, five years subsequently.

*SECOND DAY—AFTERNOON SESSION.***Implantation of the Ureters in the Rectum in a Case of Exstrophy of the Bladder, with Patient.**

Dr. George A. Peters (Toronto) exhibited the patient, and fully described the two operations he had performed on this subject. In addition to the exstrophy of the bladder, the patient had also had procidentia recti, and was therefore a great trouble and source of annoyance, disgust and loathing to his friends. In this case he has removed the exstrophy of the bladder altogether. The scrotum is present, and the testicles are descended. The condition is a congenital one, and due to defective development in the urogenital parts. At the age of two and a half years the boy first came under the doctor's notice; he is now four and a half years. All the organs and limbs were perfectly formed with this exception. On the broad, flattened and shortened penis, a groove descended down to the extremity thereof, the under skin of the urethra being exposed, and also the mucous membrane of the posterior wall of the bladder. A rudimentary prostate could be seen, and at the lower part of the bladder wall the openings of the ureters could be detected. Around these there were excrescences, mucous in character. The surrounding skin showed very little irritation, though it was constantly bathed in the escaping urine, though the escape of urine was not constant. When the surface was dried it would remain dry for fifteen seconds to one minute. A fine probe inserted into these openings of the ureters passed almost directly backwards. Both kidneys were somewhat prolapsed, as could readily be determined under chloroform. Generally speaking, in these cases the testicles have not descended. There was an entire absence of the pubic symphysis. With the finger in the rectum one can draw forward and easily detect that there is no symphysis pubis whatever. A description of the operation for the exstrophy of the bladder followed. The operation was done extra-peritoneally, and this operation would seem to hold out hopes, but the mortality is high. The ureters were fixed into each side of the rectum, and almost immediately the rectum manifested a tolerance for the urinary secretion. In forty-eight hours after the operation the bowels moved, and after that the child got along without any difficulty. It is now five weeks since the operation was done, and the bladder has all gone. Now his urine is passed into the rectum and almost immediately it manifested a tolerance for the urine. He can go from two to three hours. That day he had gone from 8 a.m., then at 11 a.m., and again at 2.30 p.m., and at night he will go from four to five hours without passing anything from the bowel at all.

Mr. Cameron thought that this operation was bound to become the operation of the future. He instanced a case in which he had done this operation for a woman, in whom it had existed for nineteen years. A good many of these operations have all proved failures.

Dr. Bell (Montreal) congratulated Dr. Peters upon the result of this case. He considered it a surgical triumph. The operation for the replantation of the ureters has been done for a good many things; and the question of the tolerance of the urine in the rectum is still a much discussed question. The results shown in this operation are good.

Dr. Shepherd thought that the operation was an ideal one, and congratulated Dr. Peters upon the great success he has obtained in this case.

Dr. Peters, in reply: There is one point we must not lose sight of, that there is danger of death from ascending pyelonephritis. When the operation has been done in animals, that has been the cause of death. When contraction occurred the ureter in the rectum would have a papilla. If we have a papilla projecting into the rectum it minimizes the danger.

Co-operation of Surgeon and Physician in Abdominal Cases.

Dr. A. L. Benedict (Buffalo), in a very interesting paper discussed this question. He instanced cases where the two should co-operate, such as in cancer of the cardia, etc., and then proceeded to discuss the diagnosis of these tumors. He thought that very often the patient would benefit if, after an operation, he was handed over to the medical attendant for care and attention.

Sir William Hingston deprecated cutting into the abdomen before a diagnosis had been arrived at.

Gall-Bladder Surgery.

Dr. J. F. W. Ross read a highly interesting and instructive paper on this subject. He exhibited a cabinet of gall-stones taken from patients on whom he had operated, and also a mucous fistula in a gall-bladder specimen. He dwelt upon the difficulty often encountered in extracting these stones from the common duct, and exhibited an instrument he had devised for this purpose.

Dr. Holmes and Professor Bell discussed the paper.

Address in Surgery.

Dr. W. B. Coley (New York) delivered a classical and scholarly address on the radical operation for the cure of hernia. He traced the rise and progress of the operation from

the earliest times, apportioning, as he proceeded, the credit for any improvements. Coming down to modern times, within the last decade, he spoke of the different operations of Bassini, Mitchell Banks, Kocher and Halsted, and concluded with a special reference to the operation for femoral hernia, and a word or two about umbilical hernia, which generally did not require operative measures for its cure.

Vote of Thanks.

Moved by Dr. Shepherd (Montreal), and seconded by Dr. Peters (Toronto), that this Association extend its thanks to Dr. Coley for his admirable address. Carried unanimously.

THIRD DAY—MORNING SESSION.

Anesthesia by Chloroform and Ether.

Dr. W. B. Jones (Rochester) contributed a very interesting paper on this subject. We should know the total solids excreted in the twenty-four hours. Heart-murmurs make no difference. The condition of the muscles and the arteries is more important, and whether filled with good blood. Any adhesions in the lungs should be ascertained. The hypodermic syringe, loaded with a solution, should always be at hand. The administrator should be thorough master of himself, and permit no interference on the part of the operator. He should pay particular attention to the work he is doing, and have no regard to the procedure of the operation, except to know the time necessary to be consumed therein. About eight drops per minute is the proper dose to keep up the anesthesia. He has seen four drops per minute maintain anesthesia for half an hour. He should be ever on the *qui vive* for emergencies.

Some Observations on the Treatment of Cancer.

Dr. A. R. Robinson (New York) spoke of the epitheliomata which could be better treated with a paste than with the knife, as, for instance, those situated around the nose and face and on the scalp—in parts where it was impossible to make a deep incision if the knife were used. The paste employed was an arsenious acid one, with equal parts of gum acacia, made of the consistency of butter. This paste should be applied, and left on from sixteen to eighteen hours before you could get the right effect. From this you will get a complete necrosis *en masse*, with a resulting inflammatory process, which, however, is limited and simple. Then you will get healing by the process of granulation.

Dr. Shepherd thinks that in the majority of cases the knife should be used, with the exceptions as stated by Dr. Robinson.

Dominion Registration.

Dr. Roddick introduced this question in a speech of some length and power. He traced the rise of the agitation from Confederation, and proceeded to outline the scheme for a Dominion Medical Council. Each province was to have three representatives on the central board—one nominated by the Governor-in-Council, one by each provincial Medical Council, and the third was to be the president of each provincial Medical Council *ex-officio*. Any practitioner in good standing, who had been a licentiate for ten years, could at any time go before this central body and receive a license to practise in any province of the Dominion: and no practitioner could do this until such ten years had elapsed. The present provincial councils were to remain as they are.

Dr. Williams (Ingersoll, Ont.), representing the Ontario Medical Council, then took the platform, and moved the following resolution:

"Whereas, the standards of education for the profession of medicine and surgery, and the qualifications for the practice of the profession, vary in each of the provinces of Canada, and the assimilation of these standards, and, if practicable, the establishment of uniform standards throughout the Dominion are desirable; and

"Whereas, in consequence of the provisions of the Acts of the United Kingdom of Great Britain and Ireland, known as the 'Medical Acts,' medical and surgical practitioners, who are by the law of a province of Canada entitled to practise the profession in such province, cannot obtain the benefits of registration under the said Acts, inasmuch as by the said provisions, the qualifications required for such registration must be regulated by the Parliament of Canada; and

"Whereas, medical and surgical practitioners, duly registered according to the law of one province of Canada, cannot legally practise in another province without being duly registered in such other province; and

"Whereas, serious practical inconveniences both to the public and to medical and surgical practitioners have arisen from the above cause; and

"Whereas, it is desirable to assimilate, and, if possible, to unify the various standards of qualifications established by the several provinces of Canada as conditions of admission to the study of the profession and to the practice thereof, such assimilation and unification being best attained by the establishment of some central authority with power to hold examinations of, and to establish and maintain a system of medical registration of, such persons as desire to practise the profession in more than one province of Canada: and

"Whereas, it is not within the legislative jurisdiction of the provinces of Canada to establish such central authority, the jurisdiction of such province being restricted to the limits of the province and to provincial objects only; and

"Whereas, it is expedient to constitute a corporation in which the legislatures of the various provinces may, if they see fit so to do, vest such powers as are necessary to effect the above purposes, and the other purposes mentioned in this Act; and

"Whereas, the appointment of such an authority is for the general benefit of Canada, and would promote the advancement of medicine and surgery throughout the Dominion of Canada; therefore be it

"Resolved that this Association heartily approves of the proposed scheme which the committee has formulated and presented at this meeting: and further resolved, that Dr. Roddick be empowered and requested to continue his efforts to have the scheme completed and carried into effect by such legislation as may be found necessary."

Dr. McNeill (Prince Edward Island) seconded the motion of Dr. Williams, and stated that the movement had his hearty support.

Sir James Grant, Sir William Hingston, Dr. N. A. Powell (Toronto), Dr. Powell (Ottawa), Dr. Harrison (Selkirk, Ont.), and Dr. Lafferty (Calgary, N.W.T.) spoke to the resolution.

It was then put to the meeting and carried unanimously, amid great enthusiasm.

The President appointed George H. Carveth and J. T. Fotheringham, auditors.

Dr. McNeill moved that the report of the Nominating Committee should be received now. Carried.

Dr. Roddick, the chairman of that committee, then presented his report.

Ottawa was selected for the next place of meeting.

President. R. W. Powell, Ottawa.

Vice-Presidents: For Ontario, A. J. Johnson, Toronto: for Quebec, A. R. Marsallais, Montreal; for New Brunswick, Dr. Meyers, Moncton; for Nova Scotia, W. G. Putnam, Yarmouth: for Prince Edward Island, S. P. Jenkins, Charlottetown: for Manitoba, W. J. Neilson, Winnipeg: for North-West Territories, Hugh Bain, Prince Albert: for British Columbia, O. M. Jones, Victoria.

Local Secretaries: Ontario, W. N. Klock, Ottawa: Quebec, J. A. Hutchinson, Montreal; New Brunswick, G. A. B. Addy, St. John: Nova Scotia, G. M. Campbell: Prince Edward Island, H. D. Johnston, Charlottetown; Manitoba, Smith, Winnipeg; North-West Territories, H. M. Lyman, Qu'Appelle: British Columbia, Dr. McGuigan, Vancouver.

Treasurer, H. B. Small, Ottawa.

General Secretary, C. R. Dickson, Toronto.

Dr. McNeill (Prince Edward Island) moved in amendment, that the name of F. N. G. Starr be substituted for that of C. R. Dickson, and that the report be then adopted. This was seconded by Dr. Chown, Winnipeg, and was carried unanimously.

THIRD DAY—EVENING SESSION

Report of Committee on Inebriates.

Dr. James Thorburn, the chairman of this committee, submitted the report, which reads as follows:

Your committee to whom was referred the question of the treatment of pauper inebriates, at the last meeting of the Canadian Medical Association begs leave to report as follows:

At the Quebec Meeting of this Association, a paper by Dr. A. M. Roseburgh was read by the Secretary on this subject. This gentleman has for years taken a deep interest in the reformation of inebriates and about eighteen months ago was commissioned by the Prisoner's Aid Association of Canada to visit institutions and interview specialists with a view of enabling him to formulate a plan for the economic treatment of pauper inebriates. After visiting eight special institutions and conferring with the best known specialists in Canada and the United States, he found that about thirty-four per cent. of those subjected to scientific treatment appear to be permanently relieved from their infirmity. This percentage, he is convinced, may be very materially increased by the adoption of a modification of the Massachusetts Probation System—changing the environment of the patients and exercising judicious supervision subsequent to treatment. While he has for many years recommended reformatory treatment with prolonged detention for the more hopeless class of inebriates, he is convinced that, for the incipient drunkard and the more hopeful class a few weeks' hospital treatment will be effective in a large percentage of cases, more especially if the case be followed up by judicious management subsequent to treatment.

Since the paper referred to was read at Quebec, the matter has been considered by the Ontario Medical Association and the plan therein outlined, was fully endorsed and also commended to the Ontario Government for adoption. We learn that influential members of the Ontario Government, to whom the scheme was submitted at an audience given by them to a committee of the Ontario Medical Association, expressed themselves as being very favorably impressed therewith and that they were disposed to recommend its adoption in Ontario.

The scheme endorsed by the Ontario Medical Association and recommended by the Ontario Government, briefly stated, is as follows:

(a) The appointment by the provincial government of an inspector of inebriate institutions. This inspector should be a qualified medical practitioner, who has made the medical treatment of inebriety a special study.

(b) The inspector should organize in the city of Toronto a hospital for the medical treatment of pauper inebriates of the more hopeful class, and in other cities of the province an inebriate department in the existing general hospitals.

(c) The inspector should also arrange in connection with each institution, where inebriates are received and treated, an organization or agency for the adoption of the probation system and giving a helping hand to the patients subsequent to treatment for inebriety.

(d) The inspector should provide for the adoption of a rational course of medical treatment for inebriates in accordance with the tenets of legitimate medicine only, to the exclusion of the use of any proprietary remedy.

Under the circumstances here cited, we beg leave to make the following recommendations:

1. While we are of the opinion that for the successful treatment of confirmed drunkards prolonged removal from temptation in a properly equipped reformatory is very desirable, if not absolutely necessary, we would nevertheless be disposed to endorse the plan herein outlined for the economic treatment of pauper patients of the more hopeful class, either in cottage hospitals or in a special department of general hospitals.

2. In case the plan of treatment of inebriates here referred to should be undertaken either by the Ontario Government or by any of the other provincial governments, we bespeak for it the cordial co-operation of every member of the medical profession who is in a position to favor this important undertaking.

Respectfully submitted,

(Signed) JAS. THORBURN,
J. GEORGE ADAMI,
W. S. MUIR.

Dr. Thorburn moved the adoption of this report, seconded by Dr. McNeill (Charlottetown, P. E. I.). Carried.

Resolution *re* Tuberculosis.

Moved by Dr. P. H. Bryce, and seconded by Dr. Jas. Thorburn: "That in view of the general, expressed belief of the medical profession and by members of this Association, that

bovine tuberculosis is directly concerned in the dissemination of tuberculosis in man, and recognizing the practical character of the several scientific and sanitary measures to-day available for limiting the prevalence of the disease in cattle, the Canadian Medical Association does hereby urge that the Federal Department of Agriculture, and the Agricultural and Public Health Departments of the several provinces, confer together with a view to elaborating a scheme whereby conjoint action can be instituted, so that these several existing laws may be so harmonized as to be made operative towards the eradication of tuberculosis in Canada." Carried.

Notes on Recent European Conventions.

Dr. R. A. Reeve (Toronto) gave at some length, an account of the International Otological Congress, the Ophthalmological Congress and the Section on Ophthalmology of the British Medical Association, paying particular attention to the address of the presidents and the subjects connected therewith. He also spoke of a paper in reference to the use of various silver salts in conjunctivitis, especially argentin and protargol, which are as effective and much less irritating than silver nitrate. In reverting to the British Medical and the Section on Ophthalmology, he referred to the address on "Injuries of the Eye" and took up the question of sympathetic ophthalmia, and said that this dread disease was a sort of malignant inflammation, which, with very few exceptions, destroys the sight of the eye.

Dr. R. W. Powell (Ottawa) the newly elected President, was then introduced to the meeting and in the course of a happy and appropriate speech, took occasion to thank them for the great honor they had conferred on him that day, and said he could assure them that the profession in the city of Ottawa would spare no pains to make the meeting next year, in 1900, the most successful one in the history of the Association.

Surgery Among the Insane.

Dr. A. T. Hobbs (Asylum for Insane, London, Ont.), said that this was a subject that had now attained some considerable width. In order to secure successful treatment, you must have the patient's confidence and co-operation, and with the absence of trust on the part of the patient, it is difficult to produce satisfactory results. The surgeon must be ever ready to depart from the beaten track of routine treatment, and initiate new methods for dealing with these patients. We have encountered all kinds of difficulties in the London Asylum, and experience has taught us how to meet these. First, there is the difficulty of diagnosis. Very little reliance can be placed upon subjective symptoms as seen in the insane. Chloroform was

first used, but this had to be abandoned, as artificial respiration had to be resorted to in many cases. Chloroform is a dangerous anesthetic to use upon the insane. Ether has given satisfaction, and more so when there is preliminary narcosis with nitrous oxide gas. We never remove a healthy ovary or healthy tube. Particularly in operations for inflammatory diseases of the ovaries, tubes, uterus and cervix, there have succeeded surprisingly good results mentally. In fibroids and in the repair of lacerated perinei, the results are not to be compared with these.

Dr. Ernest Hall (Toronto) thought that ninety-two per cent. of insane women have pelvic disease.

Cranieotomy for Microcephalus.

Dr. W. J. Wilson (Toronto) presented the patient operated on, and spoke of the conditions before and after the operation. A male child, aged four years, was brought to him in April last. He had then been taking thyroid extract for nine months, commencing with five-grain daily doses, and gradually getting up to twenty grains per day. He was in a very poor condition. He walked bent forward almost at a right angle, was very excitable, nervous, and always on the go, restless, sleepless, and could only say one word: "mamma." It was "mamma" for this and "mamma" for that, and for everything. The operations were done on him in four stages, with the object of preventing shock. We removed a piece of bone 1x2 inches, and the next morning he sat up in bed and tried to sing. He is very apt at picking up a tune; he can pick it up at once. Since operation, five month ago, he has learned quite a number of words. He walks in an upright position, and is very much improved in many ways.

Committee on Consumptive Poor.

Moved by E. J. Barrick (Toronto) and seconded by R. W. Powell (Ottawa), That the following members, together with the mover and seconder, constitute a committee, and report at the annual meeting of the Association, in 1900, upon the best means of dealing with the consumptive poor, including the providing the necessary funds therefor: Drs. P. H. Bryce and William Oldright, Toronto; J. A. Williams, Ingersoll; J. George Adami and H. LaFleur, Montreal; J. Lafferty, Calgary, N.W.T., and H. H. Chown, Winnipeg. Carried.

Bovine Tuberculosis.

The following resolution, prepared by Professor J. George Adami (Montreal) was then moved by Dr. Wishart, and seconded by Dr. N. A. Powell:

That whereas, tuberculosis in cattle is disseminated by contact and infection from beast to beast ; and

Whereas, such bovine tuberculosis is prevalent to a very notable extent in other countries ; and

Whereas, up to the present time the Dominion is relatively free from the disease, in this presenting a marked contrast to other countries ; therefore

Resolved, that the Canadian Medical Association is prepared to cordially support the Minister of Agriculture and the Dominion Government in all steps taken to secure a rigorous quarantine of all cattle entering the country, both from across the sea and from over the border; and, further, believing that the disease is eradicable, humbly begs the Government to take steps to rid the country of this disease, believing that if this be accomplished, incalculable benefit will accrue to the great agricultural industries of this country and to the health of the Canadian people. Carried.

Dr. R. A. Reeve, moved, seconded by Dr. Whiteman, that the usual honorarium be paid the General Secretary. Carried.

The Treasurer's report showed that 241 members were present at the meeting, and thirty odd visitors.

There was a balance of cash on hand of \$249.00.

Deceased Past-Presidents.

Moved by Dr. R. A. Reeve, and seconded by Dr. Atherton, That a memorandum, to be prepared by the President, be incorporated in the minutes and proceedings in regard to the lamented deaths of these ex-presidents : Dr. J. E. Graham, Dr. H. P. Wright and Dr. J. H. Mullin, and that an official expression of sympathy be sent to the widows of our late *confrères*. Carried.

Votes of thanks were passed to Dr. Roddick, M.P., for his labors on behalf of Dominion Registration ; to the Minister of Education, the Hon. George Ross, for the use of the building ; to the City Council, Toronto ; and to the Industrial Exhibition Association for courtesies extended during the meeting.

We are indebted for this report to Dr. Geo. Elliott.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

The twelfth annual meeting of the American Association of Obstetricians and Gynecologists took place in the Assembly Room of the Denison House, Indianapolis, Indiana, on Tuesday, Wednesday, and Thursday, September 19th, 20th, 21st, 1899, under the presidency of Dr. Edward J. Ill, of Newark, New Jersey.

The programme consisted of a short address by the Mayor, followed by a response of the President on behalf of the Association. Many very interesting papers were presented. Among the essayists were: Drs. J. F. Baldwin, of Columbus; L. H. Dunning, of Indianapolis; L. S. McMurtry, of Louisville; D. Tod Gilliam, of Columbus; Robert T. Morris, of New York; Edwin Ricketts, of Cincinnati; W. H. Humiston, and M. Rosenwasser, of Cleveland; Walter B. Chase, of New York; Frederick Blume, of Allegheny; J. M. Duff, of Pittsburg; W. E. B. Davis, of Birmingham, Ala.; W. H. Myers, of Fort Wayne; Rufus B. Hall, of Cincinnati; J. F. W. Ross, of Toronto; X. O. Werder, of Pittsburg; H. W. Longyear and J. H. Carstens, of Detroit; W. B. Dorsett, of St. Louis.

Many interesting and valuable discussions took place on various phases of surgery of the kidney; on hemorrhage following celiotomy; on house-to-house operating; on surgery of the liver, gall-bladder and bile ducts; on the treatment of retro-displacements of the uterus by the various methods, with a comparison of the results satisfactory, unsatisfactory, and dangerous to life. A complete report of the meeting will appear in the *American Journal of Obstetrics*, together with the papers read.

At the banquet, held in the evening, Dr. Reamy, of Cincinnati, one of the contemporaries of Fordyce Barker, Emmett, Thomas, H. P. C. Wilson of Baltimore, and others who were the founders of the American Gynecological Society, a courteous gentleman, whose locks have become silvered with years, stated that as a guest of the Association he had listened with amazement to the discussions that had taken place, drinking in with pleasure all that he had heard. He said that, as a link with the past, his position was different to that of the others present; that he was able to compare the old and the new. He considered that the progress that had been made was marvellous and was glad to know that the progress had not yet ceased, but that the hand of the surgeon was still invading new fields for the relief of suffering humanity. The tribute to the work of the Association,

in the twelfth year of its existence, coming from such a source and coming with all the freedom of a spontaneous utterance, without any attempt at flattery, must find a sympathetic echo in the breast of every Fellow of the Association, as it is but a recognition of patient toil.

One of the features of the meeting was the memorial address on the life and character of Lawson Tait, delivered by Dr. C. A. Dr. Reed and Mr. Lawson Tait spent all night in the tower of L. Reed, of Cincinnati. The *Cincinnati Enquirer* stated that the National Liberal Club in London, and quoted the last few sentences of a piece of very elegant diction. As the reporter of the *Enquirer* was pleased with this portion of the address, and as it is likely to please some of the readers of the PRACTITIONER and show them that Robert Louis Stevenson does not stand alone in writing rhyme in measured prose, we give it here:

"Dr. Tait was away from the hospital, away from the chamber of sickness, from the hall of controversy," said Dr. Reed, "and thus his great mind revelled in its freedom. England, the Indies, Africa, Anglo-American relations, the recent war between China and Japan, the contrasting features of the Occidental and Oriental civilization, the great ethical movements of the world, music, the drama, human happiness, and life itself were themes that he touched with the spark of illumination. As we walked, Big Ben, in Parliament tower hard by, tolled twelve, anon one, and again two. The moon rose and the silhouette of the great city was seen against the tinted sky of the east. The speaker of great thoughts paused to view the majestic scene. I receded a step or two that I might contemplate, in clearer perspective, the more impressive picture of triumphant genius, with the world sleeping at his feet. Thus may he abide in peaceful memory."

Another feature of the meeting was the presence of Dr. W. Japp Sinclair, of Manchester, England, Professor of Obstetrics and Gynaecology in Owen's College, of the Victoria University. Dr. Sinclair was president of the Section of Obstetrics and Gynecology at the recent meeting of the British Medical Association held in Montreal. As a guest of the Association he took part in the discussion. Owing to lack of time he will, unfortunately, not be able to visit Canada on this occasion.

The medical profession of Indianapolis tendered a reception to the Association on Tuesday evening, to which all the Fellows and guests were cordially invited. Their courtesy was very highly appreciated by the Fellows.

The next meeting of the Association will take place in Louisville, Ky., under the presidency of Dr. Rufus B. Hall, of Cincinnati.

✓ Progress of Medical Science.

PEDIATRICS.

IN CHARGE OF ALLEN BAINES, W. J. GREIG, AND W. B. THISTLE.

Ununited Fracture in Children.

Edmund Owen (*Brit. Med. Jour.*, August 19th, 1899), at the meeting of the Section of Diseases of Children, read a paper on the above subject. He puts two queries: 1. Why is non-union after fracture of the tibia and fibula in children of comparatively frequent occurrence? 2. Why does its treatment so often end in amputation? Mr. Owen refers to the frequency with which non-union occurs and the infrequency of the reported cases.

The first essay on the subject appeared in Sir James Paget's "Studies from Old Case Books," published in 1891. Mr. D'Arcy Power, in the 75th volume of "Medico-Chirurgical Transactions," gives a table of 72 cases of ununited fracture of the long bones of children, of which 45 occurred in the tibia and fibula. These writers and Dr. Packard, of Denver, in Keating's "Cyclopedia," assign the cause as neglect in treatment, or failure to recognize the fracture. The essayist answers this by the statement that he has known of a large number of cases which were recognized at once and treated properly, but which failed to unite. He ends his paper by asking if any operator present had ever established consolidation in the ununited tibia of a child. He himself confessed that all his efforts in that direction had ended in complete failure. He deprecated the habit of orthopedic surgeons stating that there was no danger in straightening the crooked legs of children.

Morbid Anatomy of Tuberculosis in Childhood.

Geo. F. Still (*Brit. Med. Jour.* August 19th, 1899), in the Section of Diseases of Children at the British Medical Association meeting, read a paper on the above subject. The material for the paper was based on his experience as Pathologist to the Great Ormond Street Hospital, where, out of 769 consecutive necropsies on children under 12 years, 269 were tuberculous.

Age Incidence.—56.5 per cent. occurred under the age of 3 years, and 43.5 per cent. under the age of 2 years.

Mode of Infection.—After a discussion of the milk infection question (especially in view of the report on tuberculosis by the Council of the British Medical Association in January, 1899) he concludes that infection occurs much more frequently

through the lungs than through the intestines. Of his 269 cases, in all probability 138 cases were infected through the lungs and only 63 through the intestinal tract. (This conclusion is significant in view of Holt's statement that infection through the intestinal canal is rare and that, in his experience, he has never been able to prove definitely that infection from milk had occurred.)

In answer to a question, the essayist said that the bacillus could pass uninjured through a healthy stomach and infect the intestines.

Tuberculous Adenitis.

Geo. Morgan (*Brit. Med. Jour.*, August 19th, 1899), at the Section of Diseases of Children of the British Medical Association, read a paper on this subject. His remarks were limited to cases coming under his own experience of glandular disease of the head and neck. These cases were much less common now than they were fifteen years ago. He makes two large divisions of glands of this part, viz.: those that drain areas of skin and those that drain mucous surfaces.

The post-auricular, occipital and superficial cervical are generally infected from the skin. The others are mostly infected from mucous surfaces, of which the gums and teeth, the tonsils, the naso-pharynx, especially the vault when affected by adenoids, are the most prolific of trouble.

Teeth and Gums.—Spongy and congested gums and carious teeth or stumps are frequently followed in the strumous child by tuberculous enlargement of the sub-maxillary and deep cervical glands. Any one can believe that the bacillus can pass through the soft mucous membrane of gums. And H. Kerner Halle, of Berlin, has lately published observations and experiments to show that the tubercle bacillus can pass through the living pulp of a tooth, down the root, and thus reach the lymphatic glands. The author had examined 3,161 children with swollen glands, with the following result: Seventy-eight per cent. of them had bad teeth of the third or fourth degree in the lower jaw, and in 70 per cent. of these the bad teeth corresponded in position to the swollen glands.

The sulcus, where the mucous membrane is reflected from the gum to the cheek, is a frequent point of entrance for the bacillus, especially is this true of the gum immediately below the lower incisor, which drains into the supra-hyoïd gland.

Tonsils and Adenoids.—Many believe that the bacillus of tubercle can and will pass through healthy tonsils and infect the glands, but the author has no experience of this. But he does know that they frequently pass through enlarged tonsils and through adenoids. The importance of healthy structure

in these parts in tuberculous subjects is seen in the frequency of tubercular infection by inhalation, the bronchial glands being infected four times to one of the mesenteric. Enlarged tonsils and adenoid tissue are often tuberculous themselves, as has been shown by experiment.

Treatment.—A great deal can be done for the tuberculous child by care of his food, environment and buccal cavity. Plenty of fresh air, cod liver oil, iodide of iron and tepid bathing. But the author particularly desires to emphasize the local treatment. That is, the source of infection. He caused enlarged glands at the angle of the jaw to disappear by treating a chronic pharyngitis which had caused the enlargement. Another case in which the pigment was painted on the tonsils and on the gum below the lower incisor teeth caused a large supra-hyoid gland to disappear. The pigment was compounded of—

Iodine.....	grs. xii.
Pot. Iod.....	grs. xv.
Ol. Mint Pep	℥ ii.
Glycerinæ.....	ʒ ii.

This will not affect all glands, but if applied before softening begins it reduces many of them.

If this method does not succeed the glands should be excised, being careful during the operation not to make pressure and to dissect from below upwards.

Treatment of Hernia in Children.

John Langton, F.R.C.S. (*Brit. Med. Jour.*, August 19th, 1899), read this paper at the Section of Diseases of Children.

Prevention.—This includes the proper dieting. Circumcision has been advocated, but the author thinks it to be unnecessary. (In the discussion which followed most of the speakers favored circumcision in suitable cases.) Muscular exercises tend to strengthen the wall of the abdomen, but of course can be used only in children over three years of age.

Treatment by Trusses.—He has practically discarded the skein of wool truss, excepting in cases of emaciated children under one year of age where it still may answer a good purpose. He quoted from an article in the *Annals of Surgery*, by Dr. Bull, of New York, comparing the skein truss with the light spring one, the result being strongly against the skein of wool. The author speaks very favorably of a light steel truss for children; but it must be well made, be of proper size and covered with soft india-rubber, and never be removed except for cleanliness. In answer to the question, How long a truss must be worn? he says: "If the patient is below one year the truss must not be discarded till the age of 4 years. If the

truss is not worn till the age of three or four, it should be worn till the child is ten years of age. If not worn till the age of seven, the truss should be worn till puberty. Statistics show that large numbers of these ruptured children are cured by the truss.

Operative Treatment should be undertaken in the following classes of cases :

- (a) Irreducible omentum.
- (b) Irreducible omentum with fluid in the sac.
- (c) Congenital hydrocele.
- (d) Strangulated hernia.
- (e) Where there is fluid in a hernia sac.
- (f) When proper treatment is impossible owing to incompetence or ignorance of the mother.
- (g) Where a truss has been worn for 3 or 4 years without benefit.

Conclusions.—1. That hernia, in infants, if properly treated, is a curable lesion.

2. Where there is a family history of hernia, preventive measures should be employed as early as possible.

- 3. Circumcision will not cure hernia.
- 4. Cases requiring operation are rare.
- 5. Hernia generally occurs at an age ill-suited for operation, and if properly treated is usually cured before any question of operation arises.]

✓ THERAPEUTICS.

IN CHARGE OF GRAHAM CHAMBERS AND J. T. FOTHERINGHAM.

Ichthalbin.

The *Brit. Med. Jour.* of Sept. 2nd, 1899, has an interesting précis of Hamburger's paper in *Therap. Monatsch.*, July, 1899, upon this new drug. It is a combination of albumin with ichthyoil, analogous to tannalbin. The observations on which the paper was based were conducted in Neumann's *Poliiklinik*, in Berlin. About 60 children were treated for various conditions, with about 1,000 grains. The dosage is, for infants under six months, $\frac{1}{2}$ to $1\frac{1}{2}$ grains, thrice daily; in the second half-year, 2 to 3 grains; in the second year, 3 to 4 grains; after three years of age, 7 or 8 grains may be given by increasing the initial dose, and after ten years, 15 grains. It should be given before meals, and best in powdered chocolate, equal parts. It is said to be free from poisonous properties.

The diseased conditions for which it was used were diseases of the skin, particularly eczema, and acute and subacute intestinal catarrh. In eczema it was found that while local treatment was necessary on account of the fact that the irritation

accompanying the disease was not controlled, the drug had a markedly helpful effect on the other side of the eczematous process, the exudation. A weeping eczema was very soon converted into a dry one, and in chronic dry eczema in several cases the drug seemed to hasten a cure by stimulating the skin. It was specially valuable in eczema of the face and scalp, so common in children.

In intestinal diseases constipation was relieved apparently by stimulation of peristalsis through increase of general nutrition. Acute and subacute diarrheas were not relieved. Local effects in the alimentary canal seem to be absent. As regards its general effect, it was plainly seen to have a marked influence upon the appetite and nutrition, thus acting well in chronic catarrh of the intestine.

Lupus.

A. C. White (*Med. Rec.*, July 22nd, 1899): The prospects of the use of liquid air in the treatment of lupus are extremely encouraging. One case of lupus erythematosus, involving the frontal region, both ears, and one side of the face, was put under treatment about two months ago. After two treatments the affected areas entirely desquamated, leaving the derma in perfectly healthy condition, slightly red, and no eschar. This was an obstinate case, which has been under treatment for a long time, resisting everything that had been done for it. There is no evidence of any tendency to recurrence.
—*Sajous' Monthly Cyclop.*, August, 1899.

Urotropin in Urinary Diseases.

Ehrmann (*Wiener Med. Presse*, June 18th, 1899) has employed urotropin with very satisfactory results. It is hexamethylene-tetramin formed from formaldehyde and ammonia. Given internally formaldehyde is found in the blood, and is then excreted in the urine. In 9 cases of periurethral abscess and cystitis after gonorrhea, where the urine was alkaline and ammoniacal and contained gonococci, and where opening the abscess and washing out the bladder had failed to cure, urotropin in doses of $7\frac{1}{2}$ grains three times a day brought about the desired result in three weeks. Five cases of bacteriuria following chronic gonorrhea were cured permanently. In one case, in spite of urotropin, relapses constantly recurred. Here there was probably a small fistulous communication with the rectum. In chronic posterior urethritis, with cloudy urine, which so long resists deep injections and irrigation of the posterior urethra and bladder, urotropin acted excellently, the urine clearing on the third or fourth day after its administration. Its action appeared to be specially marked in posterior

urethritis, so that after this was cured, any remaining anterior urethritis could be easily removed by ordinary urethral injections. These observations are founded on thirty-two cases. Urotropin also acts well in tuberculous and typhoid cystitis. In the cystitis of the enlarged prostate it lessens the need for vesical irrigation, so that, for instance, in a case where formerly they had been constantly employed, after urotropin they could be omitted for from two to three months. The writer thinks these observations show that urotropin is one of the few of the newer drugs which will retain a permanent place in therapeutics.—*Brit. Med. Jour.*, Sept. 2nd, 1899.

High Altitude and Heart Disease.

Robert H. Babcock (*Med. News*, July 15th, 1899): The conclusions reached regarding the effect of high altitude on heart disease are :

1. All forms of cardiac disease do not contra-indicate sojourn at a high altitude.
2. The ill-effects of low atmospheric pressure in some forms of cardiac disease are explicable on the hypothesis of acceleration of venous flow and corresponding quickening of the heart-beats.
3. Consequently those forms with which high altitude is likely to prove incompatible are pronounced aortic or mitral stenosis, and regurgitant disease complicated by pleural and pericardial adhesions.
4. On the other hand, patients with uncomplicated regurgitant lesions or arteriosclerosis, with or without myocardial changes, may endure low atmospheric pressure without injury.

Paralysis Agitans.

R. T. Williamson (*Med. and Surg. Review of Reviews*, June, 1899): In paralysis agitans, sulphonal or whisky and water, at bed-time, afford a good night's rest. One should also see that the bed is not too soft. Alcohol taken during the day as well as strong tea and coffee increase the tremblings. The patient's living-room should be well ventilated and not too warm. Systematic open-air treatment is valuable, carriage drives are very advantageous, and railway journeys are often beneficial. Although morphine hypodermically gives relief, it is objectionable, as the disease is so chronic. Hyoscine is the only drug which has been personally found useful. One-fourth grain should be prescribed in 6 ounces of chloroform-water, 2 teaspoonfuls of this being given; thus each dose corresponds to $\frac{1}{16}$ grain of hyoscine hydrobromate. The dose may be increased to $\frac{1}{8}$ grain. After some weeks the drug loses its good effect, when it is best to stop it for a time; the good results are again obtained by recommencing.

✓ Editorials.

THE MEETING OF THE CANADIAN MEDICAL ASSOCIATION.

The thirty-second annual meeting of the Canadian Medical Association, held in Toronto, August 30th, 31st, and September 1st, was in all respects a good one—probably the best in the history of the Association. This was a matter of surprise to many, as Montreal has heretofore held the foremost place, and it was scarcely expected that Toronto would draw as large an attendance as the former city. One of the arguments against the formation of an Ontario Medical Association was that such an organization would likely injure the parent society.

The success of the meeting was due chiefly to the magnificent work done by the Executive Committees. The General Secretary worked faithfully during the year. His extensive correspondence with members in all parts of the Dominion helped in various ways. The work accomplished by the Committee of Arrangements, under the chairmanship of Dr. Arthur Jukes Johnson, and the Entertainment Committee, under the chairmanship of Dr. Bruce L. Riordan, was the best that we have ever seen in Toronto, and more like the work done in Montreal during the meeting of the British Medical Association than any other we know of in Canada in connection with medical meetings.

There was such a plethora of papers—and many of them far above the average—that it was found impossible to have them all read. The Executive endeavored to do justice to all, and succeeded fairly well. It was unfortunate that the address in Medicine should have been omitted. Dr. Fotheringham put himself to considerable inconvenience to prepare his address, and many of the members were anxious to hear it. Why he was not called on at the proper time no one seems to know. So far as we can learn, however, it seems simply to have been an unfortunate accident, which everyone deplored. The programme and regular order of business were at times subjected to changes, which no one appears to be able to explain.

Apart from a few such irregularities, the meeting was well conducted. The President acquitted himself admirably.

He delivered an excellent address. As chairman, his remarks were always apt, and well chosen; his decisions on points of order were quick and clear. Some say they were not always correct. We don't happen to know enough about that mysterious thing called parliamentary practice to be able to give a positive opinion on some of the finer points which came to the surface.

DOMINION REGISTRATION.

It will be generally conceded that the most important subject brought before the meeting was that of Dominion Registration, introduced by Dr. Thomas Roddick, of Montreal. The good work of the latter in bringing the matter before the profession is well known in all the provinces of the Dominion. We are glad to know that there is now no difference of opinion as to the advisability of having some legislation enacted whereby a graduate can get a license to practise in any part of Canada. The only differences that are likely in the future to arise, will be in reference to details.

It was probably a revelation to many of those living in this province to find that so many men from the eastern and western provinces took such a lively interest in, and such a broad view of, the whole subject. We are glad, in the same connection, to see such men as Drs. Williams, Thorburn, Barrick, Geikie, Britton, Macdonald, and others, taking a very lively interest in the matter. Dr. Williams, of Ingersoll, has given the question a great deal of attention, and has rendered valuable assistance to Dr. Roddick in his good work.

THE SECRETARSHIP.

The Nominating Committee recommended that Dr. Dickson, of Toronto, be secretary. When the report was read, Dr. McNeill moved in amendment, that it be not accepted, but that Dr. Starr be Secretary. The amendment was declared carried. In connection with this matter we express the feelings of many in saying that this report was not presented at the proper time, and any such irregularity is a serious matter.

Apart from this consideration, we acknowledge that the meeting has a right to amend such a report if it thinks fit; but it is not usual to do so without giving a good and sufficient reason. This Dr. McNeill endeavored to do by saying that it

would be an act of injustice not to re-elect Dr. Starr. We have only to say, as far as Dr. McNeill is personally concerned, that we have a higher opinion of him than he has of us in Toronto; and that we will have to change our opinion very materially before we will get up in any medical assemblage and accuse Dr. McNeill and his friends of trying to do an unjust act.

For years we have refrained from making any comments in this connection; but now we feel impelled to state a few facts. The appointment of the present secretary was never popular in Toronto. The chief reason for this is that Dr. Starr was recognized as an extreme and aggressive *party* man, and as such was not acceptable to a large portion of the members in Toronto. He has become more unpopular for other reasons, which we need not now specify, as years rolled on. The result has been that many men who were formerly strong supporters of the Association have grown lukewarm.

All parties in Toronto combined to make the recent meeting a success, and the results were very gratifying, as all know. We were not in the inner ring as far as the secretaryship was concerned, and, therefore, had no knowledge of what was going on until we learned the result of the meeting of the Nominating Committee; but, now, we are in a position to say that four-fifths of the members resident in Toronto who attended the recent meeting wanted a change. Dr. Dickson, who is essentially a non-party man, was a most indefatigable worker as local secretary, and on that account was chosen by the Nominating Committee as General Secretary.

Under such circumstances we would like to ask Dr. McNeill (for we value his opinion very highly) when it will become *just* to have a change? The Association is going to suffer materially if the change does not come soon. We may say, in addition, that, while we have referred especially to this city, we happen to know that many outsiders agree with the majority in Toronto.

THE TRUNK SEWER.—We are glad to see that the subject of a trunk sewer is once more to the fore; this time at the instance of Ald. J. J. Graham. Some of the aldermen, are as usual, minimizing the evils of the cesspool at the Bay front. If these do not mend their ways we hope they "won't be in it"—"won't be in the swim"—for many more years.

✓ Personals.

Dr. Jerrold Ball reached Toronto in September, on his return from Europe.

Dr. Fred. G. Grasett (Tor. '95), of Port Antonio, Jamaica, was married July 9th, to Miss Kate Lind.

Dr. T. S. Farncomb (Trin. '94) has removed from Rednersville, Prince Edward County, to Trenton.

Dr. Ross, of Richmond, Va., was the guest of Dr. Riordan, of Toronto, during a short visit early in September.

Dr. George A. Peters, of Toronto, was married September 19th, to Constance Mary Redmond, daughter of Chief Justice Sir William Meredith.

Dr. W. F. Maybury (Tor. '97) has resigned his position as superintendent of the Carleton Protestant Hospital, Ottawa, and has commenced practice in that city.

Dr. J. T. Duncan has returned from London, Eng., where he has been paying much attention to Eye and Ear. He has opened an office at 39 Bloor Street East.

Professor Osler delivered the opening lecture, McGill Medical Faculty, Thursday, September 21st. It is just twenty-five years since he became Professor of Institutes of Medicine in McGill.

Dr. Kennedy Crawford McIlwraith, of Toronto, was married September 12th, 1899, to Miss May Saunders, daughter of the late Rev. J. C. Saunders, Bristol, England, and sister of the late Dr. H. J. Saunders, of Kingston.

Mr. Charles Rose, formerly chief of the Brockville police force, has been appointed by the Executive Committee of the Ontario Medical Council to fill the position occupied for years by the late Detective Thomas Wasson.

Dr. Andrew McMeans, a native of Brantford, and a graduate of Trinity University, Toronto, has been practising for several years in Mexico. He paid a visit to some of his friends in Toronto in the early part of September.

Dr. Arthur C. Duffey, son of Sir George Frederic Duffey, of Dublin, spent a few days in Toronto, in September. He is engaged in original research in connection with the etiology of cancer, and has been working for some time in the laboratory in charge of Dr. Roswell Park, Buffalo.

Dr. Wesley Mills, Professor of Physiology, McGill University, Montreal, was one of the most interested visitors at the recent dog show at the Toronto exhibition. It is considered by good authorities on the subject, that Professor Mills' "Book on Dogs" is the best that has ever been published.

Miss Ethel White, daughter of the late Dr. Thomas White, of Hamilton, niece of Dr. James White, and brother of Dr. R. W. K. White, of Hamilton, was married September 20th, to Mr. Gerald Fitzgibbon, barrister, son of Rt. Hon. Gerald Fitzgibbon, Lord Justice of Appeal in Ireland. Among the guests was Dr. White (groomsman), and Dr. Charles O'Reilly, of Toronto.

Dr. O. R. Avison, formerly lecturer on *Materia Medica* in the Medical Faculty of the University of Toronto, who practised in Toronto for several years, left Canada about six years ago for Korea, where he has been busily employed up to last spring in his work as a medical missionary. Being in need of a holiday Dr. and Mrs. Avison have returned to Canada for a visit of a few months, and will spend the greater portion of the time in Toronto.

At a meeting of the Medical Faculty of McGill University on September 8th, the two following gentlemen were elected to research and teaching fellowships in pathology : John McCrae, B.A., M.B., first-class honor man in natural science and arts, late fellow in biology in the University of Toronto, and late house surgeon to the Toronto General Hospital; and W. W. Ford, B.A. Adelbert College, M.D. Johns Hopkins, and late resident house officer in the Johns Hopkins Hospital. These research fellowships in pathology were recently founded and endowed, one by certain of the Governors of the university, the other by the Medical Faculty. The above are the first appointments, the fellowships being tenable for two years.

We have much pleasure in announcing that Dr. Robert D. Rudolf, of Toronto, passed in July the examination for membership in the Royal College of Physicians, London. Dr. Rudolf is a Canadian, born in Nova Scotia, but received his medical education in Edinburgh, and became M.B. (Edin.) in 1889, and M.D. (Edin.) in 1896. Shortly after graduating he went to India, where he practised five years. He came to Toronto in 1895, and has practised here since 1896. He is a member of the teaching staff of the Medical Faculty of the University of Toronto. So far as we know Dr. Rudolf is the only M.R.C.P. (Lond.) now living in Toronto. Previously Dr. Graham was the only Toronto physician who received the qualification, having passed the examination in 1893.

Dr. Thomas McCrae, of Johns Hopkins Hospital, Baltimore, paid a short visit to Trinity, October 3rd.

Dr. H. B. Anderson, of Toronto, on his return trip from England, where he spent the summer, went to Boston where he remained about a week, and then came to this city, September 29th.

The opening exercises of Trinity Medical College, Toronto, were held in the College Building, October 3rd, when the Rev. Prof. Clarke, of Trinity University, delivered an excellent address. The Dean, Dr. Geikie, and others also addressed the assemblage.

The opening exercises of the Medical Faculty of the University of Toronto were held in the Biological Department, October 2nd. Dr. A. Primrose delivered an admirable address on the "Life and Work of John Hunter," and short addresses were delivered by the Dean, Dr. Reeve, who acted as chairman, the Hon. Edward Blake, and the Hon. G. Ross.

Obituary.

James Cumming, M.A., M.D., F.R.C.P.I., Professor of Medicine Queens College, Belfast, died somewhat suddenly at his seaside residence in Antrim County, August 27th, aged 66.

John Duncan, M.A., M.D., LL.D., F.R.C.S.E., F.R.S.E., consulting surgeon to the Edinburgh Royal Infirmary, died August 25th, aged 60. Dr. Duncan's grandfather was the founder of the firm of Duncan, Fleckhart & Co., the well-known chemists, and his father, Dr. James Duncan, occupied a prominent position in the medical profession in Edinburgh, being for some time surgeon to the Royal Infirmary.

Book Reviews.

The Hygiene of the Mouth. By R. DENISON PEDLEY, F.R.C.S. (Edin.), etc., Dental Surgeon to the Evelina Hospital for Sick Children. London: J. P. Segg & Co., 289 and 31 Regent Street West.

This well-written and most useful little work consists of two long chapters, the first dealing with the hygiene of the mouth in children, and the second with the same problems in the adult. It should be in the hands of all school-teachers. A course on the subject should form a part of the work done in our various schools for the training of teachers. And the profession at large should have more knowledge of the subject, and be more fully seized of the importance of it. This work should suit admirably as a text-book in the premises.

Dudley's Gynecology, A Treatise on the Principles and Practice of Gynecology. By E. C. DUDLEY, A.M., M.D., Professor of Gynecology in the Chicago Medical College, Chicago. In one very handsome octavo volume of 652 pages, with 422 illustrations, of which forty-seven are in colors, and two full-page colored plates. Cloth, \$5.00; leather, \$6.00; half-morocco, \$6.50. Net.

The author of this very interesting volume has adopted a rather different line of treatment in the work in hand from the stereotyped treatise. He is undoubtedly a teacher, and his extensive experiences are embodied in the work. The material is based on the most modern principles and all of the useless material is omitted. The operations are lucidly described and aptly illustrated. A new departure is introduced in a chapter on "Dress in Relation to Diseases of Women." The matter is very appropriate and well worthy of careful study. We can confidently recommend this work to the busy practitioner and advanced student.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and *Materia Medica* in the Jefferson Medical College of Philadelphia. Octavo. handsomely bound in cloth, 490 pages, twenty-eight illustrations and three colored plates. Philadelphia and New York: Lea Brothers & Co. June, 1899.

It is not possible to adequately review this volume; its contents are too elaborate to be reviewed in the small space at our disposal. The June volume, which was delayed in reaching us, contains four distinct and comprehensive reviews of surgery

and medicine. "The Surgery of the Abdomen, including Hernia," by William B. Caley, embracing 125 pages, is of itself quite worth the subscription price. The subject is most thoroughly gone over, and the latest methods of intestinal surgery completely elucidated. The Leplace forceps for closure of the divided ends of the gut in making anastomosis Haslead's rubber inflators, and all the many other devices of intestinal surgery are described. "Gynecology," by Dr. John E. Clark, embraces 108 pages, and is written in a most conservative vein. It does one good to read of gynecological subjects treated in this manner, because of the great desire to operate "early and often" that the general literature points to. Beside these two admirable essays, Dr. Alfred Stengel devotes 128 pages to "Diseases of the Blood," etc., and Dr. Edward Jackson eighty pages to ophthalmology. We know of no series that has ever appeared that contains so much kernel as *Progressive Medicine*.

Enlargement of the Prostate; its Treatment and Radical Cure.

By C. W. MANSELL MOULLIN, M.D. (Oxon.) F.R.C.S., Surgeon to and Lecturer on Surgery at the London Hospital; Examiner in Surgery at the University of Oxford, etc. Second edition, with plates; octavo; 211 pages. Price, \$1.50. London; H. K. Lewis, 136 Gower Street, E.C.

It is pleasing to find a work appreciated to its full extent, and the appearance of subsequent editions testifies most emphatically to this point. The surgery of the prostate is making rapid strides. There are comparatively few cases in which relief cannot be offered at the present day. The author in the preface to the second edition makes clear this fact. He says: "Thanks to the progress which has been made in the surgery of the prostate in the course of the last few years—progress which only became possible when the true sexual character of the gland had been once more established—there is now no case of enlargement in which perfect relief cannot be obtained, provided only the secondary consequences which so often and so entirely unnecessarily follow it, and which are due in the vast majority of instances to the careless use of catheters, have not been allowed to work irreparable harm upon the walls of the bladder." The work should be read by every practising physician and its precepts followed.

Warner's Pocket Medical Dictionary.—Warner's Pocket Medical Dictionary is an up-to-date work in every sense of the word. The latest medical terms have all been added, 10,400 words, terms and phrases are spelled, pronounced and defined. The definitions are concise and comprehensive. Type bold and easily readable. Paper and binding neat and especially service-

able. Bound in flexible leather, round corners, colored edges. Complete tables of arteries (six pages), bacilli, spirilli, streptococci, micrococci, bacteria (eleven pages), muscles (twenty-four pages), nerves (twelve pages), dose table (fourteen pages). This latter comprises a complete list of all drugs with their doses arranged in apothecaries' measure and their metric equivalents. Every one of its 413 pages is well written and will prove a valuable addition to the library of quick reference books of any physician. It will be sent to any address upon receipt of 75c., stamps or money order. Address, W. R. Warner & Co., Philadelphia.

The Treatment of Pelvic Inflammations through the Vagina.

By WM. R. PRYOR, M.D., Professor of Gynecology, New York Polyclinic; Consulting Surgeon, City (charity) Hospital; Visiting Surgeon, St. Elizabeth Hospital, New York City.

Though this is a little volume it contains much that is valuable. It is written in a clear, concise style, showing that it is the outcome rather of practical experience than of theories on the various subjects dealt with. Though palliative treatment is laid down, the spirit of the book is aggressive surgical interference.

On the question of acute septic endometritis, a resort to curettage is advised, "if, after two days' treatment, the local and general symptoms do not improve." Great stress is laid upon this method, and the advice is strongly urged that the attendant should urge the patient to have the infected uterus cleaned out. If this operation is done imperfectly, or too late, the *cul-de-sac* will have to be opened.

The chapter on "Puerperal Infection" is strong in the direction of surgical interference "should the invasion have passed outside the uterus, curettage, and *cul-de-sac* incision, with proper dressings applied to the pelvis, will cure nearly every case." "Hysterectomy in these cases is not advised."

Full directions, down to the smallest details, are given, and the methods advised are well worth careful study.

The chapter on "Curettage," is of great interest. "Antiseptics have no place in a cavity like this." Reliance is placed on the perfect removal of the diseased endometrium, and caution is given against using caustics, lest scar tissue be produced, which will be followed by pain and pelvic neuritis. The little book is full of facts, directions and sound advice on the treatment of pelvic inflammations. In many instances heroic measures are advocated, such as could only be carried out with success by one of special skill, operating in a well-equipped hospital.

The illustrations are clear—many of them original and useful. The publisher, W. B. Saunders, of Philadelphia, has done his part well, and, altogether, the book is worthy of a good place in gynecological literature.