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THE TREATMENT OF TYPHOID FEVER.*

BY J. E. GRAHAM, M.D., L.R.C.P.,

Professor of Clinical Medicine in the University of Toronto.

Gentlemen:

It would seem fitting that the very excellent address upon the etiology of typhoid fever, to which we have listened, should be followed by some remarks upon the treatment of that disease. It was the wish of the University authorities that this part should have been undertaken by one who had spent as much time and energy in ascertaining the best methods of treatment as Prof. Vaughan has spent in the investigation of the origin of this disease. Owing to domestic affliction, the gentleman whom we had hoped to secure to address you upon this subject was prevented from coming, and, at a very late date, it was thought best that I should try to fill the vacancy.

One consideration more than any other caused me to take up this subject rather than let it go by default. During the past three months, while having under my care a very large number of cases of typhoid fever in the Toronto General Hospital, I have become convinced that I at least, and probably many other practitioners as well, have been inclined too much to rely upon a purely expectant plan of treatment, and that we have not employed all the means at our disposal to counteract the effects of this poison upon the human system. When it is stated that in the nine years previous to 1880 there were 27,000 deaths from typhoid in England alone; that in Ontario we have had in the nine years beginning with 1880 4,450 deaths, an average of about 500 each year, and that the mortality from the expectant plan of treatment has been in the neighborhood of 20 per cent. of all cases, you will agree with me that the subject is well worthy of our careful study, and that its importance is a sufficient apology for a lecture upon such a well-worn theme.

The theory of typhoid fever which in the present state of our knowledge seems to be the most probable is that the virus, in the form of bacteria, when swallowed, "is taken up by the lymph follicles of the ileum, and carried to the mesenteric glands, where it may remain for a time in a state of latency. It may then pass into the general circulation and be deposited in the lymphatic organs, including the spleen." After the introduction into the system, the bacteria favor the production of ptomaines, which in time act as poisons on the various tissues. The virus produces rapid hyperplasia, together with other local changes. One of its most constant effects is that upon the heat centre, producing in the majority of cases a high degree of fever.

The increased temperature, again, together with the toxic condition of the blood, is the cause of the most serious lesions found in typhoid cases; the softening of the heart muscle; the fibrous degeneration of muscular tissue; the

*A lecture delivered at the Post-Graduate course of the University of Toronto, December 19, 1890.

general febrile consumption of the body; delirium; sleeplessness; and the typhoid conditions, although not altogether the result of high temperature, are largely influenced by it. Moreover, high temperature produces some of the most serious nervous symptoms, acceleration of the pulse, and favors rapid decomposition of the contents of the intestines. The secretion of gastric juice and stomach digestion are not so much influenced by the fever as the secretion of the salivary and pancreatic fluid, hence starchy foods are most likely to be carried through the intestines in an undigested condition and to produce increased irritation. Such is a brief and necessarily incomplete account of the way in which this poison affects the human organism.

Now the question arises, How is it to be combated? The various methods of treatment adopted may conveniently be considered under four heads: the expectant, the antipyretic, the antiseptic, and, lastly, the specific. By the expectant method is meant the placing of the patient in the most favorable position to withstand the ravages of the disease, and to allow the fever to run its course. To accomplish this he is placed in bed in a cool room, to which abundance of fresh air is admitted. The diet is of a liquid character, and such as to be easily digested, being restricted almost altogether to milk, when that form of nourishment is well borne. The skin is kept in a healthy condition by daily sponging with tepid water, and every deviation of the bodily function is at once looked after. Excessive diarrhœa is checked, as it would be in a healthy person; sleeplessness is overcome by the administration of opiates. At the same time the strength is kept up by nourishment, and, if necessary, stimulants are used to support the flagging energies.

This method has been many years in existence, and has still many followers. That it is a great improvement upon the heroic treatment adopted in the early part of this century, and that through it we have been able to study the natural history of the disease, will be agreed to by all. We may also safely assert that in our present state of knowledge no better treatment can be adopted for mild cases. The question however comes up: In addition to these measures, excellent in themselves, and to be adopted in all cases, cannot something further be accomplished in the management of the more severe forms of this disease? The fact stares us in the face that, according to European statistics, under the expectant treatment there is a mortality of about 20 per cent. in all cases. Within the last twenty-five or thirty years, some physicians, recognizing the fact that many of the most deleterious effects upon the human body were the result of high fever, have by various methods attempted to reduce the temperature, and this has led to the antipyretic plan of treatment. There are two ways of carrying out this method: (1) by the application of cold to the body, and (2) by the administration of drugs which are known to have a positive effect in reducing temperature. In the latter part of the last century the method of reducing temperature by the application of cold was adopted to a limited degree by some physicians. In 1821 the Priesnitz mode of treatment was introduced into Europe by an empiric who, although not a scientific man, was largely endowed with shrewd common sense. This treatment by cold packs was for a time very fashionable, and in many forms of disease; in cases of fevers, among others, it seems to have been quite successful.

To Dr. Brand, of Stettin, belongs the honor of first adopting and actively advocating the cold bath treatment for typhoid fever. His earliest contribution upon this subject appeared in 1861, and since that time many articles have appeared from his pen. In the *Wiener Medicintsch Wochenschrift* of 1872 he made the assertion that no patient with typhoid fever will die if this mode of treatment is adopted from the very commencement of the disease, an assertion which certainly appears to be borne out by his statistics of private practice.

This system was introduced into France by Glenard, who when a prisoner in Stettin, during the Franco-Prussian war, noted the excellent results of Brand's method, and who, when he returned home to his native country, introduced it into his own practice. Recently some of the most enthusiastic followers of Brand have been French physicians.

In 1880 Dr. Cayley spoke very favorably of the cold bath treatment in the Croonian lectures of that year. Shortly after 1880 powerful antipyretic drugs were introduced, and have since that time been largely used in the reduction of

temperature. Within the last two or three years, however, a marked tendency to return to the cold water treatment in some of its forms has been evinced. There are four or five principal methods of applying cold, viz., sponging, sprinkling, the application of packs wrung out of ice water, coils, the ice pack, and cold baths. Cold sponging has been perhaps more widely adopted in this country than any of the other forms, and has been found, in some instances, a very effectual method of reducing the temperature. In many cases, however, this method has but little effect. The temperature is either but slightly influenced, or if it falls a degree or so, it rises again rapidly. The application of the pack of cold ice cloths, or of ice itself, is a much more effectual measure. Both methods have been largely used in the Toronto General Hospital during the past four or five months. The rule has been, when the temperature rises above 103° to use first the ice water pack, and if that was not successful, the ice pack. They are applied to the lower part of the chest, extending over the whole abdomen. The ice packs are applied to the abdomen alone. In employing this method care should be taken to see that the pack does not remain on after the temperature had fallen below 100°. I have not in any case observed shock to the nervous system, or any other evil effect from the pack when used in this way. In using the ice, I have the nurse remove and reapply it every fifteen or twenty minutes, so as to allow the skin to react. There is one circumstance connected with the application of the ice pack which might be mentioned here, and which will explain the reason for its frequent removal. The integument immediately beneath the pack becomes very cold, the capillaries are contracted, and the blood does not circulate freely through the part, and, consequently, the cooled blood does not readily pass through the system. Of course, in the deeper parts of the abdomen the blood is more readily cooled. As will afterwards be shown, this disadvantage is done away with in the cold bath system by the vigorous rubbing of the surface of the body. We have also thought it necessary to avoid all wetting of the bed, which can only be done by the free use of the McIntosh cloth.

I have also seen good effects from the use of the ice water coil or pad when placed over the chest and abdomen. The latter has the advantage of dryness and consequent comfort. The treatment by cold baths I assisted in carrying out under the direction of my senior physician when a member of the medical staff of the German army in the campaign of 1870-71. It was then introduced as a regular mode of treatment of typhoid in many divisions of the army. The statistics, by the way, of the Franco-German war are most strikingly in favor of the cold bath treatment. Among the cases treated by the ordinary methods then in vogue, there was a mortality of from 20 to 40 per cent., while among those treated by Brand's system, there was a mortality of from 4 to 12 per cent. Owing partly to the introduction of antipyretic drugs, and partly to the great difficulty of introducing such a heroic form of treatment, I have not since made use of it.

It is a plan which cannot easily be carried out in private practice, and even in hospitals the amount of work given to the attendants is often greater than can be accomplished. A bath of the ordinary size, which will allow the patient to be fully stretched out, and which can be purchased for eight or ten dollars, is all that is necessary. It should be placed at the side of the bed and filled with water at a temperature of from 65 to 70°. A sheet may be stretched over the top of the bath, and the patient placed upon it, and slowly allowed to sink down into the water. In the New York and Bellevue Hospitals, where, owing to the courtesy of Dr. Peabody, I have recently seen the method employed, the sheet was dispensed with, and the patient taken by attendants and at once put in the water. A half-ounce of whiskey is given to the patient before the bath, and hot milk is freely administered when he is taken out. The time for the bath varies from seven to fifteen minutes, according to the effect produced. While in the bath the patient is vigorously rubbed by two strong men, and ice water is occasionally poured on the head by a third attendant. The temperature generally falls for half an hour or so after removal from the bath, sometimes to a point below normal. It is better that the patient who takes a bath for the first time should not remain in longer than seven or ten minutes, as some are much more easily affected than others. After the bath the patient remains in

bed until the temperature again rises to 103°, when another is given. Rigors of a severe character often attack patients after the bath. In all cases there is more or less shivering. These symptoms do not appear to indicate any grave constitutional disturbance. The baths may be repeated eight times in the twenty-four hours, if necessary, but not oftener. Many cases require this number at first to keep the temperature down, but in a few days a less number is needed.

The immediate effect of the bath is to quicken the pulse, which, however, soon becomes slower and fuller. Many patients who dread this mode of treatment at first, will soon ask for the baths on account of the comfort they feel from them. Baths are contra-indicated in fleshy people with weak hearts or a tendency to bronchitis. They are also contra-indicated in cases of intestinal hemorrhage, peritonitis, or threatened perforation, because in such condition it is necessary to keep the patient as quiet as possible. It was at one time supposed that the baths produced a tendency to intestinal hemorrhage by congesting the mucous membrane of the bowel. Experiments upon the lower animals, however, have proved that immersion in cold water blanches the mucous membrane of the intestines, and could not therefore increase the danger of hemorrhage.

Baths are also contra-indicated in nervous cases, when they are much dreaded.

The pneumonia and bronchitis which directly result from the typhoid fever do not contra-indicate the use of baths; in fact the benefit obtained in such cases has been most marked. In cases also in which the pulse is rapid, and there is a marked typhoid condition, a cold bath has often a very bracing effect.

The statistics obtained since the introduction of this plan of treatment are as follows, quoted largely from Dr. Cayley's Croonian lectures:

In Basle, under the expectant treatment, there were out of 1710 patients 469 deaths, a rate of 27.3 per cent. Under a partial antipyretic treatment there were out of 982 cases 159 deaths, a rate of 16.2 per cent. Under the cold bath treatment, out of 1483 patients there were 130 deaths, a rate of 8.8 per cent.

In Kiel—	No. of Patients.	Deaths.	Per cent.
Under expectant treatment	330	51	15.4
Under cold baths - - -	160	5	3.1

In Stettin—	No. of Patients.	Deaths.	Per cent.
Expectant treatment- - -	1591	405	25.6
Cold baths - - - - - -	121	5	4

Percentage of Deaths—	Before.	After.
Bartels and Jurgensen - - -	15.40	3.10
Liebermeister and Hagenboch -	16.10	8.80
Pfeufer and Lindwurm - - -	13.20	5.40
Hospital in Heidhausen - -	13.50	4.80

Mortality in the Prussian Army, under Cold Bath Treatment,

According to the years, from 1874 to 1880.

Year.	Patients.	Deaths.	Per cent.
1874 ..	2735 ..	329 ..	12.0
1875 ..	3620 ..	408 ..	10.9
1876 ..	2747 ..	298 ..	10.8
1877 ..	2081 ..	206 ..	9.8
1878 ..	2112 .	190 ..	8.9
1879 ..	1741 ..	163 ..	9.4
1880 ..	2534 ..	226 ..	8.9

The previous mortality under ordinary treatment had been 25 per cent. This table also shows a gradually diminishing rate of mortality year by year, a fact which is probably due to greater attention to detail in carrying out the system. This, like any other active form of treatment, must be conducted with care and skill if good results are expected, and if carelessly carried out much injury may ensue.

Brand's latest statistics give the following percentage of mortality:

Cases in family practice	1.0 per cent.
Military hospitals - -	3.4 ,,
Consultation cases - -	3.4 ,,
Civil hospital - - -	5.0 ,,

The general result shows that out of 8141 patients treated by cold baths there were but 680 deaths, a rate of 7.4 per cent., while under all other modes of treatment, including other forms of antipyretics, the rate has been over 16 per cent.

It is then conclusively shown, so far as it can be by statistics, that the mortality under the cold bath treatment is lower than under any other method, and much lower than under the expectant plan.

The vigorous rubbing constantly kept up by the attendants is a very important element in the process, and that thereby the bath not only lowered the temperature, but acts also as a general tonic to the nervous system. The rubbing at the same time prevents the contraction

of the capillaries of the skin, thus improving the circulation and allowing the cooled blood to go to all parts of the system. If the temperature can be sufficiently reduced by the application of the cold pack, and remains so for some hours, there is in my opinion no necessity for the cold bath. There are, however, cases in which even the pack or cold coil will not reduce the temperature more than a degree or so, and when these are removed the temperature rises again rapidly. I have had two or three such cases in the hospital recently, in which I would now confidently advise the use of the cold bath. In such severe cases the baths should be given early in the disease, so that the patient may be guarded against the effects of a continued high temperature. One great disadvantage has already been mentioned, they cannot be easily given in private practice, as at least three attendants are required, as well as the surrounding convenience for giving them.

Tripier and Bouvret state many instances where the treatment was carried out in villages and country districts near Lyons. In one village there were twenty cases of typhoid; the first nine were treated on the expectant plan, and of these four died; the other eleven were treated by cold baths, and of these none died. In another town—St. Germain—there were 41 cases treated by cold baths, with no deaths. Taking all the recorded cases which occurred in the neighborhood of Lyons under the cold bath treatment, there was a mortality of 3.62 per cent.

Another drawback to the cold bath treatment is the frequent disturbance of the patient. We have always thought that rest of mind and body was a cardinal point in the management of typhoid, while under this system the patient may be taken out of bed and placed in a bath six or eight times a day. In Berlin this is remedied by placing the patient in a sort of hammock, which can be easily raised and lowered.

At this point I would like to refer to the statistics of our own hospital, where the treatment has been largely of an expectant character. The percentage of deaths for the various years is as follows:

Year.	Per cent.	Year.	Per cent.	Year.	Per cent.
1878 ..	20.0	1883 ..	14.4	1888 ..	13.7
1879 ..	13.6	1884 ..	14.0	1889 ..	15.3
1880 ..	19.6	1885 ..	9.6	1890 ..	12.3
1881 ..	12.5	1886 ..	10.8		
1882 ..	15.7	1887 ..	14.4		

The average percentage of deaths, 13.4. Total number of cases, 1381; deaths, 186; per cent., 13.4; died within six days of admission and therefore not influenced by hospital treatment, 64; deducting this number from the total we have an average percentage of 9.2. It will thus be seen that the statistics in our own hospital, under the ordinary form of treatment, have been very much better than the continental hospitals under the same system, and almost as good as some of them under the cold bath treatment. It would appear from this that we have here a milder class of cases, which do not require the cold bath treatment to the same extent.

In order to form an estimate of the number of cases having a persistently high temperature, I had an examination made of a hundred temperature charts, with the following results: One reached 106; ten, 105; thirty-four, 104; thirty-eight, 103. The one whose temperature rose to 106 reached this point but once; the ten reached the temperature of 105 but once; of the thirty-four whose temperature rose to 104, in twenty-six this occurred but once, the remainder—two, three, or four times. Of the whole number of cases, in at least forty-five the temperature rose to 103 more than twice.

From my experience in the hospital I do not think that in more than ten cases out of the hundred there would exist a continuous high temperature that could not be controlled by cold sponging, cold pack or coil, and that, therefore, there would not be a larger number of cases requiring the cold bath.

The principal drugs which have been recommended for internal administration to reduce temperature are quinine, digitalis, salicylate of soda, antipyrin, antifebrin, and phenacetin. Quinine has a very uncertain action, often even in large doses it will not reduce the temperature to any great degree. The cerebral symptoms produced by large doses, as well as the temporary deafness, are unpleasant. Salicylate of soda has a more certain action, and has perhaps been too much overlooked since the advent of newer and more rapidly acting drugs. It is doubtful if in moderate doses it has any depressing effect upon the circulation, and it has the advantage of being also an antiseptic agent. The lessening of the heart pulsation after the administration of the salicylates is probably due to the

lowering of the temperature rather than to the direct effect of the drug; it does, however, depress the motor nerve centres. Digitalis was at one time thought to be a very effective antipyretic, but its action upon the heart, particularly in some forms of degeneration, is such that sufficiently large doses to produce an effect on the temperature cannot be given. Antipyrin and antifebrin have been for the past five or six years the most extensively used drugs for antipyretic purposes in typhoid fever. Antipyrin is a very effective agent, lowering the temperature in fever often from two to twenty hours at a time. It has the disadvantage, however, of producing in some patients alarming symptoms of collapse when given even in moderate doses. This appears to be on account of an individual idiosyncrasy which cannot be made out previous to the administration of the drug. I well remember a case illustrating this point which occurred in the hospital a few years ago. The patient, a strong, healthy girl, was suffering from an average attack of fever. Antipyrin was given in two ten grain doses. The temperature rapidly fell below normal, and the pulse, which had previously been under 100, went up to over 120 in the minute; it was at the same time weak and compressible, and the patient went into a state of partial collapse, from which she could only be rallied after some hours.

I was shortly afterwards called to see a case in which a somewhat similar effect was produced by a 15 gr. dose of antifebrin. I am confident that I have observed in several cases a distinctly lower power of resistance on the part of the system to the inroads of the disease, and that patients have not recovered so rapidly or satisfactorily after the administration of antipyrin. The theory that these drugs diminish the power of oxidation in the system would also be an argument against their use.

Taking everything into consideration, I do not think Dr. H. C. Wood speaks too strongly when he says: "I believe that cold baths are much safer and more efficient than are antipyretic drugs." When we consider, then, the treacherous character of such antipyretics as antipyrin and antifebrin, that in some cases they do not succeed in reducing the temperature, that they have a depressing effect upon the system which should in every way be supported to overcome an exhausting disease, and when, moreover, we have a much more certain, a much safer, and a much more controllable method of reducing the temperature by the application of cold, it is questionable if we are justified in continuing the use of such drugs for antipyretic purposes. It must, of course, be understood that when there are no means available for the proper application of cold, it is better to give these drugs than to allow the patient to suffer from the effects of a continuously high temperature. A case came under my observation not long ago, in which the temperature ranged between 103 and 105, and the administration of antifebrin and phenacetin in large doses had no effect, nor had the cold coil. The cold baths were ordered, and the temperature was effectually reduced, and the patient recovered.

Under the third head, we shall now go on to speak of the antiseptic method. Little doubt can exist in the minds of physicians that typhoid fever is a germ disease, and after the excellent demonstration of Prof. Vaughan, we at least who have had the privilege of seeing and hearing, must be convinced of that fact. It is almost certain that in most cases the poison is swallowed and taken up by the lymph follicles, and, moreover, that the poison exists in its greatest intensity in the small intestine. At the same time, owing to the high temperature, decomposition of the intestinal contents takes place more rapidly in the intestine. If, then, we can by any means render the contents of the intestines aseptic, we prevent the inroads of poisonous matter into the system; in fact, we attack the enemy while yet in his camp, and place the patient in a safer and better condition. Such agents have been largely used by French physicians, and statistics would appear to demonstrate their usefulness.

In the Toronto General Hospital, we have used such agents as thymol and bismuth, salicylate and B. naphthol. My colleague, Dr. McPhedran, who used the thymol, is of opinion that the general effect has been favorable; the temperature did not rise so high, and the constitutional disturbance was generally less than in cases where the drug was not given; the tympanites was markedly less. In some cases the remedy had to be discontinued, as it disagreed with the stomach. I may make the same asser-

tion with regard to the salicylate of bismuth. The reason for my choosing that drug was (1) its acceptability to the stomach, and (2) that on account of its only partial solubility, it would be more likely to pass into the small intestine. It was given in five grain doses every four hours. I found it to have a decidedly antipyretic effect, as shown by some of the temperature charts. In some cases the temperature fell two or three degrees, and did not rise again throughout the whole course of the disease. I did not notice any unfavorable action upon the heart, and in only one or two cases was the stomach affected.

The antiseptic agents which have been used are naphthaline, B. naphthol, thymol, iodoform, and bismuth salicylate. According to Bouchard, naphthaline, salicylate of bismuth, and iodoform, are more or less absorbed into the system, and cannot therefore be used in sufficiently large doses without producing poisonous effects. B. naphthol is not so absorbed, and passing through the intestine unchanged produces an aseptic condition of the contents.

Dr. Clark, in a recent number of the London *Practitioner*, gives his experience in the use of this drug; he gave it according to the following formula: B. naphthol, grs. xx.; tinct. aurantii, ℥ii.; syr. lemon, ℥p.; muc. acacia, ℥iii.; aqua ad., ℥vi; ℥i. to be given three times a day. After the administration of this remedy the stools became much less offensive, and the cases seemed to run a milder course; convalescence, too, was more rapid. The same objection, however, was noticed in the use of this remedy as with thymol, viz., that it caused in some cases a derangement of the stomach. Recently B. naphthol in combination with salicylate of bismuth has been given to patients in the hospital.

There is a great future for the antiseptic method, but we have yet to find an agent which, while effective in destroying the germs in the intestines, will also be soluble and innocuous to the mucous membranes of the alimentary tract.

The treatment of typhoid fever by specifics has been taken up at different times with varying success. Quinine, calomel, and iodine, are the principal remedies used under this head.

It is now generally admitted that quinine has no specific action in this disease, except malarial. Calomel probably acts on account of its antiseptic qualities as well as by any specific effect. Liebermeister gave iodine, in the form of iodide of potassium, to the extent of from 20 grains to a drachm in the twenty-four hours. The drug did not produce any immediate effect whatever, either upon the pulse or temperature, but, as will be seen by the accompanying tables, the mortality was much diminished in those who had been put under this treatment. He also gave calomel to a number of patients in 7½ gr. doses three or four times a day. In these there was also a considerable lessening of the mortality. Out of 839 cases treated by Liebermeister, there were

	Patients.	Deaths.	Per cent.
Non-specifically treated ..	377	69	18.3
Treated by calomel	223	26	11.7
Treated by potass. iodide ..	239	35	14.6

Leaving out all cases which died within six days after admission, Liebermeister had the following results:

	Patients.	Deaths.	Per cent.
Non-specifically treated ..	355	47	13.2
Treated by calomel	216	19	8.8
Treated by potass. iodide ..	229	25	10.9

These statistics would appear to show a decided benefit from the use of the drugs.

I am quite convinced that we are on the eve of great discoveries in medicine, and these will be on the line of specifics. The treatment of tuberculosis recently established by Prof. Koch, a discovery of which we of this province (owing to the generosity of our Vice-Chancellor) will shortly reap the full benefit, marks an event in therapeutics. It is our hope and expectation that Prof. Vaughan, or some other scientist who has been studying the etiology of this disease, will soon be able to give to the profession a remedy which, when hypodermically injected, will either prevent the multiplication of germs or destroy those which already exist.

Stimulants are recommended by some authorities from the commencement of the fever, on account of the antipyretic action of the alcohol, and its supplying material for ready oxidation. I have not been in the habit of giving it until the latter stages of the disease, more particularly if the patient is suffering from septic fever, the result of absorption of poisonous matter from the intestines. In such a condition very large quantities of alcohol may be given with benefit. Recently a patient whom I saw in consultation rallied after the pulse became almost imperceptible

ible at the wrist, and he was supposed to be *in articulo mortis*. An ounce of alcohol, diluted with water, was given every hour, together with ammonia and digitalis. The patient made a good recovery.

Milk, pure and simple, is the best form of diet for typhoid patients. It should be given in moderate quantities, frequently repeated, so as to prevent the formation of dense curds in the stomach. The addition of lime water or beef peptonoids is often an advantage, and from the favorable reports we have of the use of sterilized milk in the diarrhœas of children, that form ought to be specially adapted for typhoid cases. Many patients who at first think they cannot take milk will after a time find no difficulty in digesting it. Care must be taken not to give nourishment in larger quantities than the stomach will digest, or than is necessary to support the system. If too much is given, the intestines become loaded with matter undergoing decomposition, irritation follows, and increase of tympanites, both unfavorable to the progress of the disease in the bowels. In a few cases milk cannot be given, as it will not agree with the stomach; then animal broths, beef peptonoids, etc., must be substituted.

The question of when to resume the use of solid food is often one of importance. As a general rule, we allow solid food in the hospital after the temperature has been normal for a week. In severe cases, however, when there has been serious bowel trouble, a longer time is allowed to elapse before the resumption of solid food. Boiled custard, lightly boiled eggs, and scraped beef are first given, to be afterwards followed by the starchy foods. There are many cases in which we could commence the use of solid food earlier if we were only certain of the condition of the intestines.

A case is mentioned by Dr. Cayley of a boy who was taken from the hospital by his mother because, according to her ideas, they were starving him. She gave him ordinary food, and, contrary to expectation, the boy became strong very much more rapidly than if he had remained in the hospital. A similar case occurred in our own hospital, but with the opposite result. A boy was taken out when convalescent and given ordinary solid food; perforation took place and death ensued.

Notwithstanding the fact that we have no accurate idea of the condition of the bowels, and while believing that it is by far the best policy to err upon the safe side, it has occurred to me that in some cases we allow the patient to suffer by withholding solid food for too long a time. We might try earlier by giving small quantities of such food as will be digested in the stomach: scraped beef, poached eggs, etc., to test the capacity for ordinary food. I am convinced that we too often ascribe the blame for relapses to errors in diet. We find quite as many relapses where there has been no changes made in the food; and, on the other hand, grave errors have been committed which have not been followed by relapse. We must recognize the fact that relapses are, under any circumstances, frequent in typhoid fever.

Tympanites, which in the earlier part is due to paralysis of the muscular coat of the intestine, together with increased decomposition, and in the latter stages is due in addition to intestinal lesion and peritonitis, is, when extensive, a very grave symptom; it impairs the respiratory and cardiac movements, and favors the occurrence of hemorrhage. The local application of cold will frequently relieve it when the temperature is high. The internal administration of turpentine, or one of the antiseptics already mentioned, may be necessary.

The introduction of a rectal tube was found of very great service in two or three cases in the hospital this fall. The tube is of more use when there is little or no peritonitis. When all other means fail and the symptoms are urgent, it may be necessary to pierce the bowel with an aspiration needle.

Flint recommends the administration of frequent drachm doses of sulphate of magnesia when other remedies are found to be useless. The treatment adopted in our hospital for hemorrhage is the internal use of turpentine and opium. The latter drug has almost a specific action when there is extensive sloughing of the intestinal walls, acting in the same way as in sloughing phagadæna. For the headache, which is sometimes a very troublesome symptom during the first week, I have found phenacetin to be the best remedy.

According to statistics, relapses occur in from 1.4 to 11 per cent. of cases. They are more

frequent when any form of antipyretic treatment has been adopted, and this is generally admitted to be one of the drawbacks to such measures. As a rule, however, relapses are not fatal, and as the general results are so much better under antipyretic treatment, this drawback is not of any great account; besides, it may possibly be that the cases which have relapses under antipyretic treatment, would probably have died under expectant measures. A relapse is certainly to be preferred to a fatal issue.

I would not wish to conclude without bearing testimony to the great value of skilled nursing in the management of typhoid. To give the patient the best chance for recovery it is necessary that the details should be rigidly carried out by one who has a thorough knowledge of the disease. The statistics of our own hospital give ample proof of the value of trained nursing. Although the training school for nurses was opened in 1882, it was not until 1885 that it was put in thorough working order, so that the benefit to the patient was fully realized. It will be seen by referring to the percentage of mortality, and comparing the seven years which preceded 1885 with the six following years, that there was a gain of between three and four per cent. In other words, about four typhoid patients out of every hundred have been saved apparently by the introduction of a better system of nursing.

I have thus attempted to give my views on the treatment of typhoid fever, having gone over those points upon which I had some personal experience, leaving out such as are of lesser consequence, and upon which I have no personal views to offer. I will conclude with the hope that before many years we shall have such an improved sanitary condition in Toronto that an epidemic such as we have had this year may never reoccur. I also hope that for the cases which will no doubt occur occasionally we will have a form of specific treatment which shall far exceed any yet known.

KOCH'S TREATMENT OF TUBERCULOSIS.

BY PROF. R. RAMSAY WRIGHT.

Communicated from Berlin to the University of Toronto.

[FIRST COMMUNICATION.]

There has been a decided cessation of activity during holiday week in matters pertaining to the Koch treatment. Patients have in many cases received short respites from the disturbing injection, and physicians have not been so anxious to demonstrate results to the few foreigners who remain. The great man has himself been off on a visit to his native town in the Hartz mountains, and has only now returned.

I had a long morning in the pavilions of the Moabit, which have been placed at Koch's disposal, and had the advantage of being one of a very few who surrounded him during his visit. It is of course much more interesting to hear the suggestions and watch the treatment of the discoverer of the remedy, who alone knows its nature, than to listen to those who are, to a certain extent, working in the dark.

The condition for the patients in the City Hospital Moabit are so very much more favorable than at the Charité that it is not surprising, even apart from the superintendence of Koch himself, that the results are more favorable. It is the more to be regretted that the stream of foreign physicians has chiefly been directed to the Charité, the older buildings of which by no means come up to the requirements of the modern hospital.

The Moabit, which is the second largest of the Berlin hospitals, is built on the pavilion system, with separate administrative buildings, and accomodates some 900 patients in 30 different pavilions; 150 beds have been placed at Koch's disposal, and the tubercular patients are now concentrated in the pavilions containing these.

The surgical section is under the direction of Prof. Sonnenburg, the medical under that of Dr. P. Guttmann. Both of these gentlemen retain the supervision of the special pavilions in question, carrying out the wishes of Prof. Koch, and thus enjoying every opportunity of absorbing the opinions he forms as to the progress of his remedy.

I propose to devote this letter to summarizing the latest deliverances of these gentlemen. It will be remembered that Koch indicated his belief that his remedy would be especially useful where surgical interference could assist the healing process by removing the necrosed tubercular tissue. Following up this hint, Prof. Sonnenburg has now operated on several patients with advanced phthisis, with the view of

establishing an opening through which the necrosed contents of cavities might find easy acce s to the outside. Several suitable cases presented themselves for this operation—suitable because the cavities could be definitely localized and the strength of the patients was still good. They had not been previously subjected to the Koch treatment: whether this should follow or succeed the operation is a matter for the future to decide.

Especially, cases with cavities in the apices seemed favorable; in these, adhesions occur as far down as the second rib, and consequently the first intercostal space is the easiest mode of access to such. But it does not suffice: it is necessary to resect as much of the first rib as is uncovered by the clavicle, care being taken to avoid wounding the intercostal artery by dissecting off the periosteum. The pleura having been thus exposed, a trochar is thrust through it into the cavity, and then a red-hot paquelin is introduced along the line of puncture, and the lung-tissue carefully burnt through to the cavity. No bleeding occurs; the extent of the cavity is carefully sounded, and the opening to it made freer. It is not necessary to repeat this, because the spontaneous discharge of the burnt tissue enlarges the opening sufficiently. The lung-tissue nevertheless may be burnt painlessly if it should be necessary to open into smaller subsidiary cavities; while the touching of the pleura, on the other hand, is painful. A plug of sterilized gauze and a dressing of sterilized wadding, with a gauze bandage, were employed.

Very little disturbance followed the operation, and minimal injections of lymph were made as soon as a normal temperature was reached. Comparatively little reaction was observed, and the doses have now reached a centigramme and upwards. Under the treatment the walls of the cavities clean themselves, small insular granulating surfaces appearing, which eventually become confluent. The final course of the operative interference will be looked forward to with interest. In the meantime, Prof. Sonnenburg considers the prospects sufficiently favorable to justify the new operation.

In one of the cases matters were complicated by the absence of adhesions; right pneumothorax occurred on operation; the cauterisation along the line of puncture was therefore left incomplete; but adhesions formed on the seventh day; the pneumothorax gradually diminished, and on the eleventh day a free opening was formed to the cavity by the discharge of the cauterized tissue.

I have already informed you of the results obtained by Director Guttmann at the Moabit. A recent lecture delivered before the Hufeland Society discusses his further experiences, especially in three directions—the diagnostic value of the lymph, its therapeutic value, and the results obtained in pulmonary cases.

With regards to the first, he asks, What dose must one give to be satisfied as to the presence or absence of pulmonary tuberculosis? The circumstance that such cases frequently do not react to 1 mg., nor to a gradually increased dosage, makes it desirable to begin with 3 mg.; and if the patient does not react, to increase at once to 10 mg. If there is then no reaction, tuberculosis may be considered as excluded.

An interesting example is recorded of the delicacy of the reagent. A doctor making a cover-glass preparation of sputum wounded his finger eighteen months ago, with the result of leaving a small induration half the size of a pea, which, however, was completely latent; an injection of 3 mg. produced a slight general but a violent local reaction, which gradually disappeared.

With regard to the second point—the lymph as a therapeutic agent—he advises starting out with the 1 mg. dose, and repeating the same on the third day if there has been a reaction, increasing it to two if there has been none. It is necessary to wait till the third day, because the reaction is often delayed till the second. He is inclined to interpret this delayed reaction to the absorption of the purulent contents of cavities, the bronchioles leading to which have been occluded by the local reaction, and the internal pressure within which has been increased in consequence.

After a dosage of 6 mg. has been reached, the following doses may then be increased by 2 mg., and when 10-15 mg. has been arrived at by 5 mg., always providing that no unpleasant symptoms indicate otherwise. In this way, after four weeks, the dose may reach 20-30 and even 40-50 mg.; if then the patient reacts only slightly

the dose is increased by 10 mg. till 1 decigram, 100 mg., (the maximum) is arrived at. Decigram doses, however, should only be exhibited in intervals of four to five days, and they are, of course, given in the form of the ten per cent. solution of the lymph.

With regard to the results obtained at the Moabit, Gutmann states that (1) the sputum has become mucous instead of purulent in many cases; (2) the amount (which is recorded graphically on the Moabit charts) has diminished in some; (3) the bacilli (very carefully investigated in the clinical laboratory under Prof. Ehrlich's direction), although at first increased in number, shows a tendency to diminish or even disappear; (4) in two cases the bacilli have been observed to exhibit changes of form —not the involution forms referred to in my previous letters, which occur even without injection, but a dissolution into little heaps of coccus-like bodies; (5) the weight of the patients may decrease during the first week, but improves afterwards, except such cases where there is a constant febrile reaction to the treatment; (6) physical investigation indicates improvement in the diminution of rales, and the clearing up of dullness.

He concludes by expressing the opinion that long continued observation will be necessay to establish the action of the lymph in various stages of pulmonary tuberculosis; this observation must be regarded as the special function of hospital physicians, for it is only after the patient is able to stand some centigrams or a decigram of the lymph without reaction that it is allowable to treat him as an outside case—returning to the hospital every week for an injection.

In my next letter I hope to give you some further particulars of the cases in the Moabit.

[SECOND COMMUNICATION.]

The topic of Berlin just now is Virchow's address to the medical society on Wednesday night, in which he summarises the results of *post mortem* observations made in his institute in patients who died during treatment with the Koch cure. Of these, twenty-one came under his observation in the Charité until the end of December, and seven since, while he has also had submitted to him preparations from a number of other autopsies made outside the Charité. He premises that his observations must necessarily be very different from clinical ones, as they deal with parts entirely inaccessible during life.

Of the twenty-one cases referred to, sixteen were typical cases of phthisis. One of the others, a case of tubercular meningitis, was a boy of 2¾ years, who died after four injections, amounting in all to 2 mg. In this case the hyperæmia of the pia and cortex was such as he never remembered to have seen before. He therefore considers that also in internal organs the same hyperæmia exists as can be observed in more superficial parts. The tubercles in the arachnoid did *not* exhibit any retrogressive processes; they were probably metastatic from the lungs, in which some older caseo-pneumonic spots were seen, as well as recent inflammatory changes.

Similar hyperæmia and swelling were observed elsewhere in the body in other cases; the internal surfaces of old cavities, *e.g.*, were extremely red and injected with blood, which sometimes even was found within the cavities; and one case, with rectal fistula and ulcers of the colon, succumbed to hemorrhage from one of the old ulcers, which Virchow evidently attributes to the action of the injection.

The hyperæmia referred to, also, he considers not to be of that temporary kind which may be expected soon to subside, but to be accompanied by positive inflammatory processes and active proliferation, especially in the borders of ulcers and in the lympathic glands nearest the affected parts. These exhibit a swelling, especially of the central parts, which indicates a rapid proliferation of the cellular elements of the medulla, and which accounts for the leucocytosis frequently noticed, and infiltration of diseased parts, especially tubercles, with white blood-cells. The swelling may in itself be dangerous, in the larynx, for example, where it may take on a phlegmonous character.

Among the fatal cases of ulcerative phthisis, most offered extensive recent changes in the lungs as well as inflammation of the pleura. The changes in the lungs belong to two categories, caseous hepatisation and catarrhal pneumonia. One especially noticeable case belonging to the former category was of a male

patient of 33 years, with indurated apex of old standing, who had had six injections. These were interrupted four weeks before death on account of infiltration of the lower lobes of the lungs. *Post mortem:* Hardly any lung parenchyma remained unaffected by the caseous process. In all, five of the sixteen cases referred to exhibited changes of this character.

With regard to the pneumonia observed after injection, it departed from the ordinary catarrhal type inasmuch as it recalls more a phlegmonous condition; the lung is flabbier than in the caseous infiltration, and the affected parts may become so rapidly softened in spots as to remind one, in this respect, of gangrenous broncho-pneumonia. Seven out of the sixteen cases exhibited this diffuse flabby hepatisation as distinguished from the caseous variety.

Not only does Virchow speak as above of pneumonia directly caused by the injection, but suggests (with a certain amount of reserve) that also new tubercles are formed in consequence thereof. He recalls the eruption of such in the larynx, which have been generally interpreted as latent tubercles; but without criticising this interpretation, observes that he has found submiliary tubercles in considerable numbers in such places (the various serous membranes, even the epicardium) as make it extremely probable that they are recent: at least they were quite unaffected by the injections. He considers such tubercles to be unquestionably of metastatic origin, brought about by the mobilization of the bacilli under the influence of the lymph, and thinks that the hepatisation of the lower lobes of the lungs may be accounted for by the patients not being in a condition to expectorate all the products of the softening changes taking place elsewhere in the lung, and warns against the treatment of patients who are not sufficiently strong to get rid of such products.

Virchow recognizes that the lymph attacks tubercular tissue, but is unable to explain why the submiliary tubercles referred to are more resistent. He has seen larger tubercles also of the solitary order which appeared similarly resistent. But he does not deny the necrotic changes in the tubercular ulcers in the respiratory and intestinal tract; indeed he fears that the latter may lead to perforation, and cites two illustrative cases.

I need hardly say that Virchow's lecture created great excitement, and everyone looks forward with interest to next Wednesday, when someone is sure to take up the cudgels for Koch. You have already gathered that these cases which have come under Virchow's observation are none of them of the kind which Koch himself would have considered suitable for treatment. He has always urged that in pulmonary consumption it is the early cases in which he looks forward to the success of his curative treatment, and I have already emphasized the fact that much greater care has been exercised in the Moabit in the selection of cases for treatment than in the Charité.

I shall take care to inform you in my next letter of the feeling at the next meeting of the Medical Society.

THE KOCH CURE IN LONDON, ENG.

BY DR. J. A. GIBSON, LONDON, ONT.

[Communicated to Dr. George Hodge, London, Ont., and kindly forwarded by him to THE PRACTITIONER.]

During the past three months, the world at large has been intensely interested in the injection of tubercular subjects with Koch's lymph. The medical men of London do not seem to be so sanguine as they were at first. Still, until it has had a year's trial, they do not care to express a decided opinion.

Some cases certainly seem to have received benefit, others are much the same after treatment as before; all are agreed on this, however, that only in the early stages of disease of the lungs can we look for permanent benefit from the new method. There is not that rush and universal desire to be treated in England which one reads of in Germany, and the people seem to be somewhat afraid of it. Of all classes of cases, lupus, or tuberculosis of the skin, shows most decided signs of improvement. Diseases of joints seem also very amenable to treatment by this method. So far, it has been least successful in cases where the disease is confined to the lungs. The cases mentioned are taken from some of those undergoing treatment at the Hospital for Sick Children, Great Ormond St., and London Hospital.

For injection, the original fluid is diluted one hundred times with distilled water, and to this

is added ½ to 1 per cent. of carbolic acid to keep it from spoiling. By thus diluting it, less trouble is experienced in measuring out the small doses which are usually used to commence with. The syringe is prepared by passing absolute alcohol through it; and as the alcohol causes the fluid to coagulate, it is washed out with carbolic acid and water just before using. The spot chosen for injection is usually between the shoulder-blades. The effects of the injection are, as a rule, felt first about twelve hours after, and the initial symptoms are a rise of temperature and an increased rate of the pulse, which grows very weak, while the breathing becomes quicker. If it is a case of lupus or joint disease, the part becomes red and swollen, and there is pain in the joint. A rather peculiar feature is that there is a cough developed, although previous to the injection there may have been no symptoms. The cough comes on about the second or third day. An eruption resembling measles is also noticed in a few days as a result of the treatment. In a few cases the skin peels off, as in scarlet fever. The reaction is less marked as the number of injections increase. They cause some discomfort and a good deal of restlessness until the reaction has subsided. The reaction varies in intensity according to the dose given, which is usually 2 to 3 milligrams for an adult, and also to the amount of tubercular tissue present. If it is a case of lupus, the part swells and becomes covered with pustules, which discharge, forming a scab; this after a time drops off, and leaves a clean surface underneath.

The following cases will show the result of three weeks of treatment:

Mary A., aged 5, has suffered for two years from disease of the hip. There is a good deal of pain.

On Dec. 10th, at 10 a.m., A. M. was injected with 1 milligram of fluid. At 10 p.m. the reaction commenced, and at midnight temperature was 102 degrees and pulse 106. At 7 next morning the temperature was down again, but pulse still at 140.

On Dec. 11th, another injection was made of 2 milligrams at 10 a.m. The temperature went up to 103 and pulse 132 by 9 p.m.

Dec. 12th: Another injection; symptoms not so marked.

Dec. 14th: Again injected patient; coughed a good deal.

Dec. 15th: Injected, and more coughing.

Dec. 16th: Rash came out.

Dec. 19th: An injection of 8 milligrams; temperature rose to 100.

Dec. 23rd: Another injection; the temperature went up to 102.

So far there is no improvement, no increase of movement, no breaking out about joint, and no lessening of pain.

Rose H., æt. 7; swelling of knee for the last twelve months, and tuberculous affection of right eye and lip. She was treated at the same time and in the same manner as the previous case, with the usual reaction and some slight fullness and swelling of knee, and on Dec. 13th some pain in the knee. On the seventh day some scabs came off the lip, which now looks more healthy. There is not much change in the knee, perhaps a little increase in movement.

Horace N., æt. 2; chronic affection of knee. Result of treatment: Usual reaction, but no improvement in knee.

Robert P., æt. 3: After three weeks of treatment for superficial tuberculosis, there is no improvement.

Agnes R.: disease of hip; dose increased to 8 milligrams; no reaction and no change whatever.

Douglas G., æt. 4; spinal caries; not any improvement.

Lucy M.; strumous disease of ankle; no change at all.

John C., æt. 5; lupus the size of a fifty-cent piece; improved and more healthy looking, the usual scabs having peeled off and left a cleaner surface.

Minnie M., æt. 4; tubercular knee; marked reaction; slightly less pain in joint, but there was extension on at the same time.

Thomas W., æt. 11; injected on Dec. 11th with 2 milligrams for tubercular disease of left foot and ankle. The foot swelled and became very painful; but now, after three weeks, the ankle is less inflamed, smaller, and not so painful as before injection.

John S., æt. 16; tuberculosis of foot and ankle. This case has been under treatment for two weeks; the usual reaction, foot less painful, but otherwise the same as before.

John C., æt. 5; hip disease treated for three weeks; no change so far.

Albert I., æt. 6; treated since Dec. 11th for disease of bones of foot. This case is slightly improved.

Horace P., æt. 13; lupus of face, extending from chin to eyes. On Dec. 16th, the rash appeared for the first time, six days after treatment began. He has gone on steadily improving ever since the treatment began, and now shows marked signs of change for the better. This patient was delirious once or twice from the effects of the injections, and on the sixteenth day of the treatment there was a general desquamation of the skin over the body. His mouth, which was lessened in size by the lupus, is gradually becoming larger and somewhat more natural looking. This case has shown more improvement than any of the others, and is certainly a success so far.

It will be observed that there are no cases of disease of the lungs given, and the reason therefor is that patients with consumption show less desire to be experimented on, and consequently at the present time there are very few cases which have been injected; but I believe that, in some cases at least, the result has been gratifying as far as treatment for so short a time could indicate. Dr. Heron, of Victoria Park Hospital for Diseases of the Chest, has probably got the largest number of lung cases under his care, and no doubt will give the result of his work when sufficient time has elapsed.

London, Eng., Jan 15, 1891.

THE KOCH TREATMENT IN BERLIN.

BY DR. J. D. WILSON, LONDON, ONT.

[Portion of letter to Dr. H. Arnott, kindly sent by him to THE PRACTITIONER.]

As I have been here some time and had a great number of cases of tuberculosis under observation, I thought I would write you, giving the treatment and management of patients by the Koch system. The patient is first thoroughly examined and the tubercular disease located. If in three days the temperature (taken five times a day) has not reached above 102°, it is considered a proper case for treatment. The amount of fluid injected varies according to whether the tubercular deposit is localized or general. If the seat of trouble be in the larynx or lungs, or in cases of delicate women and children, the dose to start with is .0005. The injection is given in the morning. After the first dose is injected and reaction follows, the patient must be free from fever for one day before a second injection is given. The same dose is repeated until no reaction follows. After that it is increased to .001; this is kept up in the same way until no reaction follows, when it is increased by .001 until .01 is reached. When this dose has been reached without reaction, Friedlander considers the case for the time being cured. The patient is now discharged, but required to come back once in four days, when the same dose is given, this being kept up for four doses; then once each week for one month; then once in two weeks for three months. Caution: During the first treatment, the patient should be confined to bed and kept constantly under the supervision of the physician. Reaction is a series of phenomenæ following an injection. They usually begin to appear about six hours after the injection; exceptionally, however, they may be delayed and appear twenty-four or even forty hours after. For this reason, Friedlander and Cornet leave three days between injections, especially at first. Fever is not characteristic of this reaction; in some cases this symptom is lacking; while pain in the head, languor, increased and altered sputum, may show that the remedy is really acting. No chill may be observed at first, but after two or three injections there may be one. The duration of the reaction is very short in the great majority of cases.

The question has been asked, Is the treatment contra-indicated in hæmoptysis? Mr. Cornet answers, no; the saliva may be streaked after the first injection, but that this disappears after the injections have been given several times. It is suggested, however, that great caution be used in cases of hæmoptysis, that the initial dose be very small, and the intervals between doses long. In cases where the hectic fever reaches above 102½ F., treatment should be withheld. The question was asked, What is the length of time required to treat cases of incipient phthisis? The answer was that it usually takes five weeks before they cease to react to .01 doses. After this they must be treated according to method

by Friedlander. I am inclined to think that a case could be cured with greater rapidity if, in addition to the injection of Dr. Koch's lymph, they were given tonics and other building-up treatment. As yet they depend on the lymph alone for a cure. The number of patients here is so great that it is impossible for them to have proper hygienic surroundings, which greatly retards a cure.

At the Charité Hospital, where I attend, there are about 1600 consumptive patients, in all stages. In the majority of cases in the first stage of phthisis, lupus, tubercular glands, and joint affections, I can see a marked and rapid improvement in the symptoms. The cough, night sweats and fever disappear, and in a short time they improve in appearance and weight.

As a diagnostic remedy, the lymph is of the greatest use. A young physician had an injection performed upon him as a matter of experiment, not having the slightest suspicion that he was the subject of tubercles. A violent feverish reaction followed, which led to a careful examination by a physician, and this revealed a slight but unmistakable disease of the apex of one of the lungs.

In tubercular disease of the synovial membranes of the knee-joint, the swelling caused by injection soon subsides and leaves the joint smaller than before. In severe cases of tubercular trouble, the necrotic tissue is separated from the healthy by the action of the lymph, and should be removed by surgical means, as it is only in the milder cases that the diseased tissue is absorbed. In cases of tubercular glands, after the injection they become inflamed, swollen, and slightly painful; later, they diminish in size. These symptoms are noticed after each injection until the glands become normal in size, when the remedy ceases to react.

I expect to remain here for about three weeks yet, and will continue my studies under Professor Senator of the University Polyclinic. I hope to reach London about the 1st of February with some of the lymph, as Sir Rober Mallet, here, to whom I had a letter of introduction, is doing all he can to procure it for us, and he has assured me that we will likely obtain a supply by that time.

Berlin, Jan. 1, 1891.

THE
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Contributions of various descriptions are invited. We shall be glad to receive from our friends everywhere current medical news of general interest.

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TORONTO, FEBRUARY 2, 1891.

THE OUT-PATIENT DEPARTMENT OF CITY HOSPITALS.

We believe that reform is called for in the method of conducting the management of out-patients in our city hospitals. There are several directions in which the out-patient department could be improved, so that it might prove of greater service to the necessitous poor, and, at the same time, afford an opportunity for useful instruction to the student. Insufficient records are kept of this class of patients, and many evils result. It seems to us more important that records of these patients should be kept than it is that complete histories of the sick in the wards should be minutely detailed. Many of the patients are seen but once in the week; they, therefore, deserve more careful examination than the ward-patients, who are constantly under observation, and a record should be kept of their condition from time to time.

Occasionally a patient who does not appear very ill in the out-patient room subsequently develops serious symptoms, and he may die; the friends then apply for a death certificate. The physician under whose care he appeared in the outdoor department is frequently not justified under such circumstances in granting a certificate, as he is not in a position to certify to the true cause of death. Such a case recently occurred in the North Staffordshire Infirmary, and an inquest was rendered necessary in consequence of the assistant surgeon refusing to grant a certificate.

It would prove of great benefit to the student if he were taught to examine these cases in a systematic way, and if he were required to place

on record the details of cases. The patients presenting themselves in an out-patient department are largely made up of a class which illustrates very well the great majority of ailments met with in general practice. Instruction in the method of managing such cases is therefore of great service to the student, and would help him very greatly in his management of patients in private when he becomes qualified for practice. It is the experience of every young man beginning practice that his knowledge of slight ailments and of minor surgery is insufficient, and he has to learn by experience many things which he might have become familiar with if the instruction among out-patients at the hospital had been adequate. His attention during his attendance at hospital is constantly directed to the details in the management of serious cases as seen in the wards, whilst he is left sadly ignorant of the methods of dealing with simple maladies. In many of the hospitals in Britain records are kept; thus in St. Bartholomew's Hospital the patients seen by Dr. Lander Brunton are carefully noted in a book which has been prepared and printed with appropriate headings for the systematic record of the details of such cases; so, too, in the outdoor cliniques of the Edinburgh Royal Infirmary a similar record is kept. We would suggest that suitable forms be prepared for the various branches of the outdoor department, and that the students in rotation be required to fill in the records. In this way he would be trained to systematically examine patients as they come under the care of the physician, the surgeon, the specialist in the eye and ear department, and the gynæcologist. We believe that great benefit would result both for the patient and the student if such a scheme as we have suggested were elaborated.

AN EPIDEMIC OF DIPHTHERIA.

Diphtheria of a very malignant type has been epidemic in Halifax for some months. The health authorities have taken the matter in hand and are putting forth every effort to stamp out the disease. The city ought to be one of the healthiest in the Dominion; situated at the seaboard, with the natural slope of the land rendering the accomplishment of a perfect system of sewage easy, and possessing, as it does, a perfect water supply, it seems inexplicable that the health of the city should not be good, and yet we are told that the annual death rate is one-half greater than that of London! The explanation appears to be that the system of sewage is far from perfect at present, and that garbage and filth are allowed to collect and are not disposed of as they should be. Under such circumstances a disease like diphtheria readily gains headway, and attempts to eradicate it prove futile until the sanitary condition of the city is improved. It has been suggested that the disease has spread from St. John's, Newfoundland, to Halifax. Diphtheria has been very prevalent in the former city, where an outbreak of unusual severity and malignancy has existed for some time. There is a great deal of direct communication between the two ports. The condition of St. John's, from a sanitary point of view, is much worse than Halifax. The authorities in our large cities should learn a salutary lesson from these epidemics; the citizens of Toronto are thoroughly aroused at present, in consequence of the amount of typhoid occurring during the autumn months. The importance of a thorough drainage system and a good water supply cannot be over-estimated, and the necessity of a competent man of undoubted ability as superintendent of the health department is an essential item in the preservation of the city health.

KOCH'S TREATMENT OF TUBERCULOSIS.

It is somewhat difficult amidst the varieties of evidence to judge as to what is likely to be accomplished in the treatment of tuberculosis by Koch's methods. The enthusiastic have been inclined to hope for too much, while the pessimistic have gone to the other extreme. The results, according to reports up to the present time, have been good, bad, and indifferent. We have learned enough to know that the lymph is a powerful agent for good or evil, and that the greatest care should be exercised in the selection of cases. We have much pleasure in publishing in this issue some interesting communications from Berlin and London.

We are pleased to notice that Prof. Ramsay Wright's letter, giving the results of treatment in the Moabit Hospital, of Berlin, where a large

number of patients are being treated under the supervision of Prof. Koch and his trusted assistants, is very hopeful in its tone. It shows that there are great possibilities in the treatment of tuberculosis, both from a surgical and medical point of view, with the new remedy.

Prof. Virchow's address has created quite a ripple of excitement, as he gives *post mortem* reports which will exemplify the grave dangers connected with the use of the lymph. In a second address he explains that he considers it a valuable curative remedy, but he warns physicians against the serious dangers connected with its use. All the evidence at our disposal up to the present time shows that we may fairly expect wonderful results in the near future, but we must have patience to investigate very carefully the effects of the remedy for some time to come.

We are glad the University of Toronto has been able to send an abundant supply of the lymph to the various hospitals throughout the province, and we hope that rules accompanying the different supplies will be carefully observed. Where any doubts exist about the technique of injection, dosage, after treatment, etc., those who receive the remedy should wait until all preparations are fully matured, all proper instruments for proper dilution and injections at hand; and, above all things, carefully select their patients.

NOTES.

IN connection with the statement made some time ago, that Jews are exempt from cancer, it is interesting to note that, in the vital statistics of the Jews of the United States, thirteen males and twenty-one females are returned as having died from cancer during a term of five years. Compared with the deaths from cancer in the whole of the United States, the death rate is about one per cent. less. The Jews have had greater loss than their neighbors from death by diphtheria, diarrhœal diseases, nervous and circulatory diseases, but less from tubercular diseases.

The birth rate is tending to diminish year by year; the Jewesses born on this continent seeming to be less fertile than those coming from Europe.

Meeting of Medical Societies.

TORONTO MEDICAL SOCIETY.

Dec. 17, 1890.

The President, Dr. Spencer, in the chair.

Dr. A. R. Robinson, of New York, gave a communication on

MALIGNANT CUTANEOUS EPITHELIOMATA.

We believe that the cells in a secondary growth are the direct descendants of, and have their origin from, the cells of the primary tumor; we are further inclined to believe that the disease is parasitic, but whether parasitic or hyperplastic, it does not matter as long as our operative procedure destroys the growth. In the case of simple histioid tumors, we accept Cohnheim's doctrine, that they come from excess of growth; as the tumor grows, it pushes aside the tissues and compresses them so as to form a capsule, there is no infiltration of surrounding tissues whatever going on. In cancer the manner of growth is different; pathological epithelium spreads throughout the tissue and infiltration takes place, so that what appears macroscopically as the outline of the tumor is by no means an indication of its limitations. The same is true of cutaneous epitheliomata; the epithelium undergoes a process which we may term hypoplastic, a long way beyond the apparent limits of the tumor, groups of cells are found within the lymph spaces. With regard to the origin of secondary tumors, we accept the view that they are the direct descendants of the cells of the primary growth. Thus in secondary tumors in the liver, the cells of the liver take no part in the process of development of the primary growth. If we accept the theory of the parasitic origin of these tumors, then this view of the origin of secondary tumors is difficult to explain. We must examine carefully in the tissue between the primary and secondary growths, and we find, oftentimes more successfully than at others, groups of cells in the lymph spaces, forming a continuous connection between the two growths. It is very frequently only a question of time to have recurrence after removal; this is in reality not a true recurrence, but is due to the failure in our attempt to remove the entire primary growth. Perhaps only one individual cell may

be left after operation; if such be parasitic, then it is sufficient to account for the so-called "recurrence." If it be parasitic, then we should try to find some means of destroying the organism with some material which, when applied, would destroy it, or we might make the ground less favorable for its growth. We have at present at our command methods by which we are enabled to attain this result.

The method of treatment which gives the best result is that which removes the greatest amount of pathological tissue and causes the least amount of pain. From a study of the method of extension of these growths, it is clear that if the surgeon will cut beyond the disease he will effect a cure. When we have to deal even with a small cutaneous epithelioma, we must cut very wide. The majority of cutaneous epitheliomata are on the face, and we cut as widely as possible under the circumstances. In the margins of our wound we have almost to a certainty left some pathological epithelium behind; if we have done our operation antiseptically, this epithelium will be preserved, and although the wound heals kindly, recurrence is sure to occur. If, on the other hand, we have not used antiseptic precautions, then the subsequent inflammation at the margins may, and often does, destroy the pathological epithelium in the neighborhood, and a cure is accomplished. This then affords us an indication against the use of antiseptics in such cases. Sometimes this inflammation is not sufficient and it is necessary for us to employ some more powerful agent to accomplish the destruction of the pathological epithelium. In the case of malignant epithelioma of the wrist, or the ear, the penis, etc., we can remove wide of the growth by resorting to amputation, and this course must be followed.

The operation of *scraping* malignant growths, usually performed at intervals, is followed after each operation by a reaction which stimulates the growth to extend. *Scraping plus the application of a caustic* has been advocated, *nitrate of silver* has most frequently been employed for the purpose; this, however, merely causes a small superficial necrosis. *Nitric acid* has been used; this is not strong enough and does not destroy the growth rapidly enough. *Caustic potash* acts much more rapidly, and is more useful because it has great diffusive powers; the necrosis is extensive, but the pain produced is great.

It would be an advantage if we had some caustic, elective in its action, which would destroy the pathological epithelium and leave the normal tissue uninjured. *Pyrogallic acid* will sometimes act in this way; it will do so in lupus. *Resorcin* also, as a reducing agent, will have the same effect (used of the strength of grs. 30 to the ounce, it may be combined with calomel). This substance has a more satisfactory action than pyrogallic acid. *Arsenic* acts in the same manner. A paste may be prepared composed of equal parts of arsenious acid and gum acacia, mixed with water to the consistence of butter. This may be applied and left on for, on an average, sixteen hours. We find that an area beyond the apparent limitations of the tumor is attacked by the resulting inflammation, and the growth may in this manner be destroyed. This method of treatment possesses the special advantage that it may be employed in certain localities where neither cutting nor scraping is possible. The arsenious acid is elective in its action. If we have applied the paste and obtained sufficient intensity of action, then treat the resulting sore on ordinary principles. If after three or four weeks it has not healed from all sides as it ought to have done, then we believe that some pathological epithelium has been left and we reapply the paste. But even if healing does take place, still some pathological epithelium may be left behind; consequently it is imperative in these cases to keep track of the patient for at least two years before pronouncing the disease cured.

Whether or not these malignant growths can be benefited by the inoculation of the virus of erysipelas, is a question which cannot yet be satisfactorily discussed. By whatever means we attack pathological epithelium, we must remember that it extends widely. Caustics are preferable to the knife, or we may use caustics after a cutting operation. We must attack the disease energetically, and if we operate at intervals, we must allow no reaction between the times of attack. We must not use arsenious acid on mucous surfaces; caustic potash must be substituted.

In the discussion which followed, Dr. J. E. Graham stated that he considered the treatment

advocated by Dr. Robinson as sound, supported as it is by clinical experience, and based upon a recognition of facts gained from a knowledge of the true pathology of the disease. He narrated the history of a case in which a superficial epithelioma of the forehead recurred after excision. Three years ago the recurrent growth was excised and the wound burnt thoroughly with caustic potash. There has been no return. He asked Dr. Robinson's opinion as to the difference between rodent ulcer and epithelioma.

Dr. A. B. Macallum said the question of interest to him was whether or not the disease was parasitic; he still adheres to the opinion that the disease is due to the presence of a special organism. Referring to Dr. Robinson's remarks concerning the relation of the cells in a secondary growth to the cells of the primary tumor, Dr. Macallum stated that he had a specimen of a growth in the liver which shows a direct relationship between the liver cells and the cells of the growth, the latter being apparently descendants of the former. This would also bear out the parasitic theory of origin. The parasite is always lost sight of in the treatment, and rightly so; the growth of the epithelium is very properly the thing taken into consideration. A single cell is sufficient to continue the growth and to cause recurrence. Certain experimenters have taken the pathological epithelium of cancer and introduced it into the tunica vaginalis of the rat; a great number of cells necrosed, a few survived and were found growing and proliferating, forming secondary growths in the peritoneum; occasionally only one cancerous nodule appears as a secondary growth: such a nodule starts from a single cell. There is said to be no specifics for cancerous processes, but the treatment by caustics is of that nature. Albumins are dissolved and compounds formed which are very poisonous to the tissues. Caustic potash causes the production of a poisonous albuminate which kills the epithelial cells. Nitric acid acts by giving rise to an acid albumin which is destructive. We have something of an analagous nature in the fact that proteids are found to be the prime agents in vaccination.

Dr. Ferguson asked if Dr. Robinson would recommend the injection of irritants into affected axillary glands.

Dr. Atherton has never employed caustics; he believes that 50 per cent. of epithelioma of the lip are cured by the knife and do not recur.

Dr. A. A. Macdonald referred to the usefulness of caustics in certain cases where the knife cannot be employed; he illustrated his remarks by referring to a case.

Dr. Reeve stated that in his experience with epitheliomata about the eye, he finds that the patients rarely present themselves until the tissues are pretty well infiltrated. In these cases, although we think that we have removed the entire growth, and although a plastic operation may have given an apparently perfect result, yet there is always a fear entertained of recurrence. Dr. Reeve thinks that the best course of procedure would be to remove the growth with the knife, then apply caustics, and do a plastic operation at a later date.

Dr. Powell and Dr. Price Brown narrated cases successfully treated by caustics.

Dr. Robinson, in reply, stated that great difference of opinion exists as to the diagnosis between rodent ulcer and squamous epithelioma. He fails to see any difference between a rodent ulcer and an infiltrating epithelioma. As to the etiology, Dr. Robinson regards epithelium as possessing just as much ability to form a new growth as fibrous tissue, or any other form of tissue; but in the variety of tumor we are considering to night, one inclines to the parasitic theory in studying the etiology. The question is whether these growths are merely hyperplastic or not; the epithelium passes into the lymphatic spaces and extends rapidly. Microscopic section will show the organisms to be of similar character in different forms of tumors, and it is a question as yet to be settled whether or not these act as an exciting cause. As to the secondary growths, such as those instanced by Dr. Macallum in the liver, the difficulty of studying the process is great; we find that the peculiarities of the cells of the secondary growths have always the characteristics of those of the primary tumor. The tendency of inheriting the ancestral characters of the cells, even in their arrangement, would tend to show that the cells in the secondary growth do not originate from the cells of the organ which is the seat of the secondary growth. We sometimes observe a cancer of the jaw, and on the lip, high up, in contact with the tumor, another

growth; we have in such a case a secondary growth produced by mere contact, this would point to a parasitic origin. If the secondary tumor arises from the primary tumor and from the cells of such, then, if the origin be parasitic, the parasite must reside within the epithelial cells.

Injection of the axillary glands has been tried by Dr. Robinson, but with no great advantage; because between the seat of the primary growth and the secondary we have pathological epithelium in the lymph spaces. The efficacy of the paste depends upon the manner in which it is applied; it ought to be applied at the proper time, and, if necessary to apply more than once, then it should be used at appropriate intervals.

THE ASSOCIATION OF AMERICAN ANATOMISTS.

This society was formed two years ago, the officers consisting of the following gentlemen:—President, Joseph Leidy, M.D.; First vice., Frank Baker, M.D.; Second vice., F. D. Weisse, M.D.; Secretary-treasurer, A. H. P. Leuf, M.D.; Executive Committee: Harrison Allen, M.D. (Chairman); Burt. G. Wilder, M.D. and Thomas Dwight, M.D.; these officers being elected for a term of three years. It will be noticed that these gentlemen are all distinguished anatomists, and the effort of the society is to encourage practical work, the members being asked to present at the yearly meetings some portion of their original work for the year. One meeting has been held in Washington, one in Philadelphia, while this year it was at Boston, and in the anatomical lecture-room of the Harvard Medical School. A single oil portrait decorates the walls of this room; it is that of Dr. Oliver Wendell Holmes, so long professor of anatomy in this school.

The association was called to order on the afternoon of the 29th inst., by Dr. Weisse, of New York, who occupied the chair in the absence of the president. Among others, there were present, Professor Dwight, of Harvard University; Dr. Mixter, of Boston; Dr. Heintzman, of New York; Professor Wilder, of Cornell University; Dr. Duncan, of Toronto; Dr. Gage, of Ithaca; Dr. Weidman, of Boston.

The first paper was by Dr. Mixter, on

CORROSIVE PREPARATIONS BY DIFFERENT METHODS.

He gave details of the methods he has followed with such success, and presented numerous specimens which excited the admiration of those present, on account of their completeness and beauty.

After discussion on this paper, Professor Dwight read his

STUDIES ON THE SPINE,

accompanied by thirteen specimens which had been prepared, at different times, in the anatomical department of Harvard. Dr. Dwight's studies on the spine have been most careful, and his measurements brought out points which can scarcely fail to be of great use, especially medico-legally. His collection of spines contained several anomalies, the most interesting being the four cases in which well developed cervical ribs were present. In one case, the cervical and first dorsal ribs had united, so as to leave a foramen between. The question would arise, however, as to whether these are really cervical ribs or not. One authority holds that every process not united is a rib; that every vertebra causing such un-united process is a dorsal vertebra, and that all vertebra above the dorsal are cervical; all below, lumbar. The essayist concluded, giving as his opinion that it is of less importance to be able to map the divisions correctly than to be able to locate the the attachments of the psoæ, the insertion of the diaphragm, or the lowest level to which the pleura descends.

Several members discussed this most valuable paper, very closely agreeing with Dr. Dwight's deductions.

The following day (Tuesday, Dec. 30th), the association met for a forenoon and afternoon session. Dr. Sheppard, of Montreal, and others arrived.

The first paper was by Dr. Gage, of Cornell University, upon the

FIBRINE FILAMENTS OF BLOOD LYMPH IN MAMMALIA AND AMPHIBIA, WITH METHODS OF PREPARATION.

He was followed by Dr. Sheppard, of McGill College, who read a paper and presented preparations to show that the semi-lunar bone is

not confined to the radius in its articulation, but plays also upon the triangular fibro-cartilage covering the ulna. If the pyramidal bone is large, then the semi-lunar has but a small bearing on the plate of fibro-cartilage, and *vice versa*. Professor Sheppard also holds that where the triangular fibro-cartilage is pierced, this is always the result of disease. He presented also a number of other interesting specimens.

Dr. Dwight was the chief speaker in discussing this paper. His own investigations in regard to the semi-lunar bone had led him to adopt very much the views now enunciated by Dr. Sheppard.

Dr. Wilder, of Cornell University, then read a paper on

THE BRAINS OF A SHEEP AND CAT, LACKING THE CALLOSUM.

This condition is a very rare one in the human race, as may be judged when, out of the thousands of brains examined, only some fifteen cases are on record. Many of these had been so badly preserved as to be of little use in throwing light on the results of this curious condition. The opinion was expressed that where the callosum is wanting, the double layer of velum would be found reduced to a single layer, continuous anteriorly with external pia. Thus the roof of the third ventricle would be formed of but one layer each of ependyma and of pia mater. The essayist presented specimens of the examinations, and the paper, which was a very interesting one, was discussed by Dr. Duncan and others.

Dr. Carl Heintzman, of New York, then presented his paper on

PROTOPLASM AND MITOSIS.

His views, which are well-known, are startling. He asserts that the cell theory, as usually held, is entirely erroneous—in fact, he sweeps away the theory entirely. He finds in a bit of protoplasm (such as the amorba) a well-marked reticulum. The presence of this reticulum has been denied by many authorities, but Dr. Heintzman most unhesitatingly asserts its presence. Not only so, but he holds that it is in this reticulum that the life of the protoplasm exists, not in the fluid portions of it, nor yet specially in the nucleus. The movements of our own bodies are due to a similar reticulum, for the sarcous elements he holds to resemble the protoplasm of the amorba. He vigorously combats those who speak of the blood as a tissue; there is no fluid tissue. After explaining what is meant by the term mitosis, the essayist exhibited to the members some beautiful microscopic preparations showing this condition.

Dr. Fish then read an excellent paper on

OCCLUSION OF RHINOCELE IN THE DOG.

Dr. Wilder's last paper was upon the

RELATION OF THE OLFACTORY PORTION OF THE BRAIN TO THE CEREBRAL.

The opinion expressed was, in brief, that, as the olfactory portion was developed in advance of the cerebral, it (the olfactory) was really of more importance to the animal in that stage of his existence, and the thinking part of the brain, which was added afterwards, as a sort of after-thought, was really the less important part.

Dr. Heintzman and others discussed the papers, Dr. Heintzman vigorously supporting the views put forth by Dr. Wilder.

The secretary, Professor Dwight, then read a paper from Dr. Langdon, of Cincinnati, on

THE HOMOLOGY OF THE CEREBRO-SPINAL ARACHNOID,

with the other serous membranes. Dr. Langdon claimed to have demonstrated the existence of two layers of arachnoid, viz., parietal and visceral. He has not yet, however, traced these two layers to their point of union, which would be at the emergence of the cerebral nerves. He hopes to accomplish this before another meeting takes place. He also claims to have discovered a pair of foramina, hitherto unknown, and which he proposes to name the "Lunated Foramina." As described by Dr. Langdon, they open a free communication between the cavity of the arachnoid and the sub-arachnoid space; are found one on either side of the medulla; measure half an inch by a quarter of an inch, and are crossed by three or four fine bands of fibrous tissue. They lie just opposite to the foramen of Magendie.

Dr. Wilder expressed grave doubts in regard to these foramina lunulata. The probabilities were that the openings were artificially produced.

Dr. Duncan, in discussing the question of the two layers of arachnoid, while admitting the

necessity for further work on this matter, expressed the opinion that future investigations would demonstrate the presence of the visceral and parietal layers of the arachnoid.

Dr. Sheppard stated that he had seen the so-called lunated foramina produced artificially in the dissecting-room.

The association then adjourned, to hold its next meeting at the call of the secretary in the city of Washington.

Pamphlets Received.

Mechanical Obstruction in Diseases of the Uterus. By Geo. F. Hurlburt, M.D., of St. Louis, Mo. Read at the 16th annual meeting of the Mississippi Valley Medical Association, Louisville, Kentucky, Oct. 9th, 1890. Reprinted from the *Med. News.*

Prof. R. Koch's Method to Cure Tuberculosis Popularly treated by Dr. Max. Birnbaum; translated from the German by Dr. F. Brendecke, Milwaukee, Wis.; H. E. Haferkorn, publisher.

Note on the Virile Reflex. By C. H. Hughes, M.D., St. Louis.

The Psycopathic Sequences of Hereditary Entailment. By C. H. Hughes, M.D., St. Louis.

Census Bulletin. Vital Statistics of the Jews in the United States.

Prospectus of the London Post-Graduate Course, 1891.

An Address on Ether Drinking; its Prevalence and Results. By Ernest Hart, Editor of *The British Medical Journal.*

Supplemental Report on Cartilaginous Tumors of the Larynx and Warty Growths on the Nose; Unilateral Paralysis of the Lateral Crico-Arytenoid Muscle. By E. Fletcher Ingals, A.M., M.D., Chicago.

The Abuse of a Great Charity. By Geo. M. Gould, M.D., Ophthalmologist to the Philadelphia Hospital.

Antisepsis and Asepsis Before and After Major Gynæcological Operations. By Howard A. Kelly, M.D., Professor of Gynæcology in the Johns Hopkins University.

Abnormal Intro-thoracic air pressures and their Treatment. By Charles Denison, M.D., of Denver, Colorado.

Twenty-first Annual Report of the State Board of Health of Massachusetts.

Forty-eighth Report of the Legislature of Massachusetts Relating to the Registry and Return of Births, Marriages, and Deaths.

Sander's Question Compends:—
Essentials of Diseases of Children. By W. M. Powell, M.D.

Essentials of Pharmacy. By L. E. Sayre.

Essentials of Practice of Medicine. By Henry Morris, M.D.

Quiz Compends. Diseases of Children. By M. A. Hatfield, M.D.

Therapeutic Notes.

Quinquaud recommends, to relieve the itching of urticaria, the frequent use of

Aq. lauro.cerasi	- -	10 parts.
Chloral	- - -	1 "
Water	- - -	40 "

La Médecine Moderne recommends for migraine the following powder:

℞.—Citrate of Caffeine	gr. 1½
Phenacetin	gr. 2
Sugar of Milk	3i

Repeated if necessary in two hours.

For flatulence and constipation.

R.—Magnesia
Sulphur sublim. aa. gr. 75

Divide into fifteen capsules. One after each meal.

In hysterical convulsions leave the patient as much to herself as possible, avoiding physical restraint. Pressure over the epigastric or ovarian regions will often bring an attack to a prompt termination. Another effectual method is to apply gradual pressure over the eyeballs, maintaining it for several minutes: *London Medical Recorder*. Still better are firm pressure over the supra-orbital nerves, or forcible wrenching of the great toe.

Prichard has found phenacetine the most reliable of the modern anti-neuralgic and analgesic remedies in sciatica. He gives it in seven grain doses every four hours, at the same time making use of iron, quinine, arsenic, and other tonic remedies as indicated.

Buzzard prescribes salicylate of sodium in vertigo associated with auditory nerve symptoms.

In traumatic rupture of the membrana tympani, the chief rule of treatment is to do no harm. The best treatment is simply to close the meatus with a wad of absorbent cotton, and to avoid all use of the syringe. Avoid the use of anything in the ear thus injured. If the ear is carefully stopped with cotton—antiseptic preferred—the patient may attend to his affairs, if there is no other complication to forbid it.—*Journal of Med. Sciences.*

A German physician recommends, for the cure of inveterate constipation, the insufflation of a few grains of powdered boracic acid into the rectum.

In Sajou's *Annual of the Medical Sciences*, it is said that the unpleasant symptoms sometimes associated with the continued use of iodine may be prevented by the daily administration of fifteen grains of sod. bicarb.

Physicians are warned, by the *Pharmaceutical Journal*, that phenacetine is now being freely adulterated with antifebrin, which is about ten times as cheap as the former.

INJECTION FOR CANCER OF THE BLADDER:

R.—Iodoform . . . 1 ounce.
Glycerin . . . 1 ounce.
Distilled water . . 1 drachm.
Gum tragacanth. . 2 grains.—M.

Add a teaspoonful of this mixture to a pint of hot water. The bladder is to be first washed out with water as hot as can be borne, after which the iodoform mixture just named may be injected, and then permitted to escape. These injections should be repeated three times a day; and it is worthy of remark that after three or four injections very great relief generally ensues. —*Medical News.*

MENTHOL PLASTERS.—Menthol has been used for some time to relieve pain from various causes. Its virtues are well known, but the effects of its application have, as a rule, not lasted long. Messrs. Davis & Lawrence Co., of Montreal, are now preparing it in the form of a plaster, in which it is combined with medicinal gums. This "D. & L. Menthol Plaster" has proved very serviceable by relieving pain, especially when produced by neuralgia or rheumatism It is prepared in yard rolls, seven inches wide, each of which will make seven good-sized plasters.

Personal.

MR. GEORGE MURRAY HUMPHREY, formerly professor of anatomy, and lately of surgery, Cambridge, has received the honor of knighthood.

DR. RICHARD QUAIN (M.B. London, 1840; M.D., 1842) has been made a baronet. He is in his 75th year, an Irishman by birth, and one of the best known physicians of London. He is the editor of "Quain's Dictionary of Medicine," and has been for some time Physician Extraordinary to the Queen.

DR. DONALD MEYERS (Trin. '89) is still in Vienna.

DR. C. MACLACHLAN, of New Rockford, North Dakota, was in Toronto in January.

DR. E. P. GORDON, of Toronto, has been appointed surgeon to the Canadian Pacific Steamship Company.

DR. W. BEATTIE NESBITT, of Toronto, has recently returned from Berlin, where he remained about six weeks.

DR. J. H. PARSONS, late of Meaford, has recently returned to Canada, having completed three years' study in the Eye, Ear, and Throat Hospitals of London, Berlin, Vienna, and New York. He will shortly commence the practice of these specialties in Toronto. Dr. Parsons was assistant-surgeon in the former Toronto Eye and Ear Infirmary.

Births, Marriages, and Deaths.

BIRTHS.

GRASSETT—At 208 Simcoe street, on Monday, January 19th, the wife of F. Le M. Grassett, M.B, of a son.

MARRIAGES.

BISHOP—GILBERT—At Willard, N.Y., on January 8th, Edwin R. Bishop, M.D., to Bessie Gilbert.

Miscellaneous.

THE eighty-fifth annual meeting of the medical society of the State of New York will be held in Albany on Tuesday, Wednesday, and Thursday, February 3rd, 4th, and 5th, under the presidency of Dr. W. Warren Potter, of Buffalo.

HENRY C. LEE, of Philadelphia, has given $50,000 for the erection of a building for hygienic instruction, as an annex to the University of Pennsylvania. It is expected that it will be the finest hygienic institution in the world.

THE annual meeting of the Canadian Press Association will be held at Toronto on Friday and Saturday, Feb. 13th and 14th.

DR. J. Algernon Temple's hospital, "Bellevue House," which has just been completed, is ready for the reception of cases of women requiring medical and surgical treatment. Last week he had three ovariotomies in the new building. The sanitary arrangements are complete, and the equipments are all that could be desired.

THE LAW AS REGARDS TWINS. — When twins are born in France, the last born is considered by law the eldest! Consequently, if both survive, and, in the case of boys, reach manhood, the second is called to the army to serve, being pronounced the eldest. By some extraordinary calculation the medical men who were consulted at the passing of the Act years ago came to the conclusion that the last born of twins was always the first conceived.—*Medical Press and Circular.*

PRESCRIBING LIQUORS.—"During the recent heated political term in South Carolina a convention met at the county site. The town being a 'dry' one, delegates suffered much from thirst, which fever a thrifty physician sought to allay by prescriptions of whiskey and beer. The size of one dose, a dozen bottles, attracted the law's attention, and the medical man is now in the law's clutch. From this he attempts to rescue himself by pleading his professional privilege, but the judge says that while 'prescription' is broad enough to cover a black draught, it lacks elasticity enough for a dozen black bottles."—*Druggist's Circular and Chemical Gazette.*

A FORECAST IN REGARD TO CHOLERA.—Dr. J. H. Rauch is reported as having said, at the recent annual meeting of the Illinois State Board of Health, that a conference with the health officials of Great Britain and Germany had given him the impression that they agreed in thinking that there was great danger of the spread of cholera this year; and as having added that, after a careful review of the situation, he felt that this country also was in great danger of its introduction, though by extreme vigilance at the maritime ports this might be prevented.—*N. Y. Med. Jour.*