Dominion Medical Monthly

And Ontario Medical Journal

VOL. XXXIV. TORONTO, JUNE, 1910. No. 6.

Original Articles

SURGICAL COMPLICATIONS OF TYPHOID FEVER.*

BY J. A. GUNN, M.D., WINNIPEG.

During the past twenty years or more, probably no disease has been of such common interest in the West to the medical profession and the public generally, as has Typhoid Fever, of which something like 5,000 cases have been treated in the Winnipeg General Hospital alone

Out of a series of such extent, many interesting surgical complications might be recorded, but the scope of this paper will permit me to deal with only a few of the more important.

Without any doubt, the most common of the grave complications is perforation, which occurs in from 2 to 3 per cent. of all cases of typhoid, and to which is due fully one-third of the total mortality of the disease. The feature which renders it of special interest to the surgeon is its amenability to surgical treatment alone, and the constantly decreasing although still alarmingly high death rate even with the most approved surgical treatment.

In the series of cases above mentioned, there has been the usual number of perforations, but I wish to refer only to those cases which occurred during the past twenty months—my term of residence in the hospital. During this time I have had the opportunity of seeing 12 cases, 11 of which were operated upon with three recoveries. The remaining case refused operation, but the diagnosis was confirmed at autopsy.

The patients were all males, ranging from 20 to 43 years of age;

*Read at the annual meeting, Canadian Medical Association, Winnipeg. August, 1909.

10 being under 30. The average time after the onset of the disease in the 8 cases in which this is recorded was 22 days, while the average stay in the hospital before perforation occurred was 13 days. Of the fatal cases, the average length of time the patient lived after the operation was three days, one case living eleven days. Between the sudden pain, which we may assume marks the occurrence of perforation, and the operation, the average time was thirteen hours, although seven were operated on within six hours, two of these successfully. The other successful case was not operated upon until 27 hours after the first symptom.

The type of disease may be classified as moderately severe in the majority of cases, although in at least three cases no grave symptoms could be noted previous to the perforation. In three cases hemorrhages had occurred; distension was present in five cases; delirium in two.

In only one case could any indiscretion in diet be found as a possible cause. In this particular instance the patient was at about the end of the third week of the disease, which was of that type characterized by a severe toxemia. He had been kept on sterile water during his stay of eleven days in the hospital, when a friend smuggled him in an orange, and this addition to his dietary was soon succeeded by profuse and repeated hemorrhages, and finally perforation.

Of the symptoms which are usually described as accompanying this condition, only one was uniformly present, viz., pain in the abdomen. In every case the onset of the pain was sudden, and in almost every case so severe as to cause the patient to cry out. A few hours after the onset the severity of the pain was frequently considerably diminished, so that one examining the patient then might have hesitated in making a definite diagnosis. Tenderness and rigidity were usually present before perforation, but in six cases no rigidity could be detected for from 30 minutes to several hours after onset of pain. In only two cases was vomiting a symptom. Liver dullness was absent in one case only.

In the majority of cases a slight increase in the rapidity of the pulse rate followed the onset of pain within a very short time, and progressed if operation was delayed. There were, however, some notable exceptions to this rule. In one case the pulse rate decreased from 92 to 78, and remained practically stationary for about 24 hours, when it commenced to rise, and soon reached 128. The decrease in the pulse rate, together with the subsidence of the pain, delayed the diagnosis, and hence also the operation. With the increase in the pulse rate, a definite diagnosis of perforation was made, and at the operation an exceptionally large perforation was

found with advanced peritonitis, which proved rapidly fatal. In another case there was no perceptible change in the pulse rate during the first twelve hours. In three cases the pulse rate increased not more than 10 or 12 beats per minute before operation.

The temperature records are by no means uniform. In four cases there was practically no change; in five there was a slight rise; in one case a sudden rise of several degrees, and in two the temperature fell.

Autopsy was obtainable in only 3 of the cases. In the case in which operation had been refused a perforation was found nine inches from the ileocaecal valve. In another case, one which had survived the operation four days, there was no evidence of general peritonitis. The perforation was perfectly closed, but the lower two feet of the ilium was very dark in color, and in an extremely ulcerated condition. The other case was one which had lived 11 days after operation. To relieve the extreme distension and post-operative ileus, an artificial anus had been made on the left side 6 days after first operation, with only temporary relief. The perforation was closed, but a sinus leading down from the artificial anus to the pelvis allowed considerable feces to escape in this direction, and this was the direct cause of the fatal termination.

The leucocytic counts were very variable. In four cases, one of which recovered, there was a leucocytosis varying from 14,800 to 28,400, with a percentage of polymorphonuclear cells ranging from 80 to 94. Successive counts in one case showed a lessening leucocytosis, while in another it was increasing. In four other cases, one of which recovered, the number of the leucocytes was normal or below normal, and successive counts showed the number to be decreasing.

The condition of shock which it is sometimes claimed immediately follows perforation, and should be an indication for delaying operation, was not noticeable in any case in this series.

The treatment adopted varied but slightly in the different cases. In one, operation was performed under local anesthesia, while in all the others a general anesthetic was administered. In one case the abdomen was closed without drainage. Following operation, patients were put in the modified Fowler position, and continuous saline proctoclysis instituted.

The conclusions arrived at from a study of this series of cases may be briefly summed up as follows: The classical picture of perforation in typhoid fever is rarely, if ever, seen, except in cases in which operation has been unduly delayed. A perforation may occur as early as the eighth day of the disease, but usually occurs toward the end of the third week. A sharp pain in the abdomen

coming on suddenly should be regarded with the gravest suspicion, and if no other cause can be found, one is justified in making a tentative diagnosis of perforation and treating it as such, even without any other symptom. If added to this there is rigidity or tenderness, the diagnosis may be made positive.

The leucocytic count, or at least our present interpretation of it, is entirely unreliable.

The essential point in treatment is early operation, and nothing should be allowed to interfere with this procedure. To wait for positive symptoms is to court failure. "When in doubt, OPERATE," should be the surgeon's motto in these cases. If no perforation be found, which will be very exceptional, the operation need only be very brief and practically void of danger.

During the period covered by the above series, two cases were operated on in which the diagnosis was found to be incorrect. One proved to be a ruptured pulmonary abscess, while in the other no abnormality could be found, although there had been the sudden pain, tenderness, extreme rigidity, rise in temperature and pulse rate. This case made an uneventful recovery.

Although cholecystitis is now found to occur fairly frequently as a complication or sequel of typhoid, it is only within comparatively recent years that typhoid has been recognised as a causal factor, Bernheim, in 1889, being the first to call attention to the possibility that the typhoid bacillus might cause gall stones.

It is now definitely known that typhoid bacilli are nearly always present in the gall-bladder during the course of the disease; that they may persist for many years after an attack, and that they occasionally form the nucleus of gall stones.

The time of onset varies greatly, but it is usually later on in the course of the disease. The extent of the process may vary from a mild catarrhal cholecystitis to perforation.

The symptoms usually arise suddenly, the most prominent being pain in the region of the gall-bladder. There may be a chill, high temperature, rapid pulse, vomiting, tenderness and rigidity of abdominal wall; the latter symptoms indicating a localized peritonitis, which may occur even without perforation. In cases of perforation, the symptoms are quite similar to those of intestinal perforation.

The treatment in a mild case should consist in local measures for relief of pain, while in case of perforation immediate operation gives the patient the only chance of recovery.

In the intermediate group of cases, each must be treated on its own merits. Opium should be avoided if at all possible, and tapping the gall-bladder should never be attempted. Local measures

should be tried, but if symptoms are acute and progressive, operation is advisable.

In one case which is reported in this series, the patient was convalescing after a severe attack of typhoid. Her temperature had been normal for seven days, when it suddenly rose to 102½, and severe pain in the region of the gall-bladder was complained of. The temperature remained elevated four days, during which time the gall-bladder was easily palpated. On the fourth day the temperature dropped to normal just as suddenly as it had risen, the enlargement of gall-bladder disappeared, and the patient had an uninterrupted convalescence. About two years later, I understand, she underwent an operation for removal of gall stones.

A second case occurred more recently. Patient was admitted to hospital on August 26th, 1907, and ran a typical typhoid course, followed by a mild relapse. On September 26th, during the course of relapse, severe pain was complained of in upper part of abdomen, and on September 27th a severe chill, lasting about six minutes, caused the temperature to rise to 105½. It remained elevated between 103 and 105 for four days, then gradually dropped to normal. During this time there was considerable pain in the region of the gall-bladder and bile was present in the urine. Temperature now remained normal for two weeks, when patient was wakened out of her sleep with severe pain over gall-bladder, and temperature rose to 101 3/5. Pain was relieved by hot fomentations and restricted diet, and the temperature dropped to normal the following morning. Eighteen days after, a similar attack occurred, and again in 16 days. During both of the attacks patient vomited considerable greenish fluid and passed considerable mucus by the bowel. No further attack occurring during the following fortnight the patient was discharged, having been in the hospital one hundred days. Since her discharge she has had several attacks, but they are becoming less severe and farther apart.

An interesting, though somewhat rare complication, of typhoid is that known as Typhoid Spine, no better name having been suggested to date, owing to the, as yet, obscure nature of the pathological changes.

No case is reported in the series of cases treated in the Winnipeg General Hospital, so it may justly be called a rare complication.

Dr Halpenny of this city has made a careful search of the literature on this subject, and finds seventy-two cases reported, and I wish to briefly record a few of his findings from the analyses of the reports of these cases.

The symptoms, as a rule, arise during convalescence, although they may set in during the attack, or even months after. By far

the most prominent symptom is pain, which is usually extremely severe. The seat of the pain is, in the majority of cases, in the lumbar region of the spine, but no portion of the spine is exempt. The preference for the lumbar region may be explained by the fact that the bacillus of typhoid may be cultivated from the marrow of any of the vertebrae, but in greater numbers in the lumbar region than elsewhere. The pain may be accompanied by a high temperature, but this is just as frequently absent.

In twenty-two cases tenderness was present. In twelve no swelling, tenderness or other local symptom was present other than the pain on movement. In a few cases there were hypersensitive areas on either side of the spinal lesion. In twenty-three cases spinal deformity, varying from a slight prominence to marked kyphosis and scoliosis was present. In only three cases is any deformity stated to have remained. Out of eleven cases in which radiographs are reported, distinct changes in the bone or intervertebral disks were recognized in nine. The conclusion drawn from the analyses was that the condition is not neurosis, but is characterized by more or less definite local pathological lesions, which are sufficient to account for the symptoms. The prognosis is favorable, although the course is slow, usually extending over from three to five months. The most essential point is an early diagnosis, and consequently early treatment ,which consists in opiates for the relief of pain, rest either in bed or by means of mechanical supports, tonics, and some would recommend the cautery.

Perhaps the most common surgical complication of typhoid is abscess formation. This may be multiple or single, and hardly any portion of the body is exempt. Numerous cases are recorded where it affected the axilla, ischio-rectal fossa, neck and buttocks. Bacteriological examinations in these cases usually reveal a mixed infection, although the bacillus typhosus occasionally is the only organism found.

In spite of the fact that this condition is so common, cerebral abscess is extremely rare, Keen in his monograph recording only four cases. I refer to this condition particularly because a case occurred in the hospital within the past year. The patient, a Polander, 30 years of age, was admitted to the hospital on the 4th of February of this year, stating that he had just recently recovered from an attack of typhoid fever. He complained of a painful swelling of quite recent development over the left parietal bone. There were no constitutional symptoms other than a slow pulse. Examination of eyes showed normal fundi. On shaving his head a scar was found over the tumor, and patient gave a history of having been hurt when two years old. The day following

his admission to the hospital he had a slight spasm, somewhat resembling an epileptic seizure, and lasting about two minutes. On the morning of the fifth day he became deeply comatose and died within a few hours. At autopsy a cerebral abscess was found extending from the vertex to the mid-parietal region and communicating through a small opening in the dura and skull with a sub-pericranial abscess. Pure cultures of the typhoid bacillus were obtained from pus in abscess in brain and from pus in abscess external to the skull.

Laryngeal complications of typhoid fever, although extremely grave, are fortunately so rare that many authors do not even mention them. Keen has, however, collected two hundred and twenty-one cases, with a mortality of sixty-seven per cent., and probably speaks more authoritatively on the subject than any other writer. In the series of cases which I am considering, only one case of this nature is recorded, and in this the clinical picture very closely resembles that described by Keen. The patient was convalescing from a severe attack of typhoid, and had been able to be out of bed for a fortnight, with no untoward symptoms other than a discharging ear, when, without any apparent warning, extreme dyspnoea, cyanosis and other symptoms of laryngeal stenosis set in.

The condition was alarming in the extreme, and a fatal termination was averted only by immediate tracheotomy. Following this the patient made a rapid recovery, although still compelled, after a lapse of nineteen months, to use the tracheotomy tube. One month after the development of the laryngeal complication an operation for mastoid was performed, but this had apparently no connection with nor did it interfere with the progress of the recovery from the former complications.

The patient had at no time complained of a sore throat, but, as he did not speak English, he may have had trouble without its being noted. An absolutely normal temperature for two weeks being followed by a slight rise during the three days preceding the onset of the acute symptoms, may, in the light of the after developments, be interpreted to mean that some trouble was developing.

What the exact pathological change was in this case I am unable to say. Keen states that the three conditions which may be found, viz., edematous laryngitis, ulcerative laryngitis and laryngeal perichondritis are often found extremely difficult to differentiate even at post-mortem, and certainly much more so in those cases which recover.

The treatment and prognosis in all are identical, and the clinical fact should not be forgotten that from a very minor sore throat

affection, indicated perhaps only by a slight hoarseness, very grave symptoms may suddenly develop and demand immediate surgical attention.

Another very rare complication is thrombosis of cavernous sinus. Of this I wish to report two cases, the only ones occurring in this series, and, strange to say, both in the same year and only about one month apart.

The first case, a man aged 56 years, was admitted to hospital September 16th, 1904, with definite symptoms of typhoid fever, including a positive Widal reaction. On September 19th, his fourth day in hospital, he had a severe chill which recurred on the following day and again a few days later. On September 25th he had a slight hemorrhage, with a marked drop in temperature. This was repeated the two days following. On September 27th the right eye became slightly inflamed, and this was soon followed by marked chemosis and swelling of the eyelid, which very shortly afterwards completely closed the eye. The same condition developed in the other eye within two days. During this time patient's condition became rapidly worse, and death occurred on September 30th.

The second case was a woman 32 years of age, who was admitted to hospital on November 1st complaining of the usual symptoms of typhoid fever of the second week. On the fifth day in hospital she had a severe hemorrhage, which recurred after an interval of two days. At this time swelling appeared in the left eyelid and rapidly spread to contiguous structures. On the following day the right eye became involved, but the condition did not progress so rapidly nor to such an extent as in the left eye. Patient was by this time semi-comatose, and remained so until death occurred on the eleventh day of her stay in the hospital.

Unfortunately no autopsy could be obtained in either of these cases, but the edematous nature of the swelling, its sudden onset in one eye, and gradual extension in the other, and the rapidly fatal termination practically exclude any other diagnosis.

PERNICIOUS VOMITING OF PREGNANCY.

ADAM H. WRIGHT, B.A., M.D., M.R.C.S. (ENG.),

President of the Canadian Medical Association, Professor of Obstetrics, University of Toronto.

We are much indebted to Dr. Whitridge Williams of Baltimore and his assistants, who have demonstrated, to some extent at least, the nature of the disturbances of metabolism which cause a peculiar toxemia, and pernicious vomiting during pregnancy. Chemical examination of the urine in such cases shows a decrease in the amount of nitrogen excreted as urea, and an increase in the amount excreted as ammonia. Without referring to other changes we may accept the fact that this excess of ammonia excreted, or, as it is called, the ammonia coefficient, furnishes a fair indication of the severity of the poisoning. In normal pregnancy it is 4 or 5 per cent., and in cases of toxemia may rise to 10, 20, 40 per cent., or even higher. Dr. Williams has expressed the opinion that if this ammonia coefficient exceeds 10 per cent. the patient's life is endangered, and the pregnancy should be immediately terminated.

The following history is interesting in certain respects:

Patient.—Mrs. A., aged 27, secundipara, became pregnant early in August, 1908. Nausea and vomiting commenced early in September. Treatment, including the administration of catharties, sedatives and enemas of salt solutions, failed to relieve the symptoms. She steadily grew worse until September 30, when the ammonia coefficient was 14 per cent. The most distressing symptom was almost constant nausea, which prevented her from eating, drinking or sleeping. The clinical signs, and the results of chemical examination, appeared to indicate the advisability or necessity for the induction of abortion. The maternal instincts, however, were very strong in the patient. She preferred to take great risks so far as her own life was concerned in the interests of her unborn babe.

Treatment and Clinical Course.—It was found that a hypodermic injection of one-quarter of a grain of morphine had no effect, and it was thought that a large dose might quiet those nerve

*Read before the Toronto Academy of Medicine, March 8 1910. Selected from Journal of American Medical Association, May 7, 1910.

centres, which, like so many specks of dynamite, were causing a vicious circle of explosions within the digestive tract, and especially in the stomach. Consequently one-half grain of morphine was administered hypodermically; and, shortly afterward, calomel was given, one grain every hour for four doses. This treatment produced satisfactory results. The patient had some sleep during the night, and felt fairly well the next morning—better than she had felt for a month before. The nausea returned, however, during the forenoon, and she had a very bad afternoon. It was then decided to give larger doses of morphine. Accordingly one-half grain was administered hypodermically at 9 p.m., one grain of calomel was given by mouth half an hour after, and as the morphine had not produced sleep another quarter-grain was administered between 10 and 11 p.m. The patient had a comfortable night, slept well, and felt comfortable and happy the next morning. As the nausea returned each afternoon this treatment was continued for five more nights with such excellent results that on the seventh day from the commencement of this treatment the patient had no nausea or vomiting. During this week she had five grains of morphine administered hypodermically, and eleven grains of calomel by the mouth. Although at this time (October 7) the general condition was vastly improved, the ammonia coefficient was still fairly high—8.2 per cent. After this less morphine was administered at bedtime for five days, after which it was stopped entirely. Calomel was given occasionally during the remainder of the pregnancy. After November 1 the patient enjoyed excellent health until she reached full term, May 8. In accordance with my custom, during the last five years of inducing labor at term or within two or three days after, labor was induced May 10, when a healthy child was born. At the time of writing (nearly nine months later) mother and child are both well.

The doses of morphine may seem large to some, but it was hoped that large doses would prove efficient when average doses produced no good effect. It is believed by some (perhaps many now) that half a grain often does good when one-eighth or quarter of a grain does harm. The dose of calomel may also seem large to some. Four grains for a woman with such a stomach, and with such low vitality, might seem a somewhat heroic dose; but in many forms of both toxemia and septicemia, large doses are frequently, if not generally, well borne by those having exceedingly disordered stomachs, and often if not generally do a world of good. If the patient vomits at once after taking one calomel pill another is given half an hour afterward, and such administration is repeated until eight pills are swallowed in some cases. It would appear

that this old-fashioned medicine is the best antidote to certain poisons known to-day.

It will be noticed that in this case the ammonia coefficient rose to 14 per cent. According to Dr. Williams' rule this pregnancy should have been terminated on or before September 30, *i.e.*, when pregnancy was about two months advanced. Considering that this patient is now a strong and happy mother, with a beautiful, healthy babe, such a procedure seems too awful to contemplate. We are learning much through modern physiologic chemistry about the various types of toxemia: but we should be careful to avoid reaching mathematically precise conclusions regarding exceedingly serious questions on insufficient data. We had hoped that the investigation of careful, conscientious workers outside of Baltimore had proved the incorrectness of this 10 per cent. rule. We find, however, that so high an authority as Sir John Byers, of Belfast, tells us[1] that he agrees with Whitridge Williams that "if this ammonia coefficient rose to 10 per cent. one might conclude the case was toxic, and one should empty the uterus as soon as possible."

It should be understood in this connection that emptying the uterus in a case of pernicious vomiting of pregnancy is one of the most dangerous operations in obstetrical surgery. There have been a number of heart-rending tragedies in Toronto from this cause during recent years. Certain healthy, happy brides, after short illnesses from pernicious vomiting of pregnancy, died so suddenly after the induction of abortion under chloroform anesthesia that the grief-stricken relatives had not time to say farewell. In connection with these serious cases two things should be kept in mind: (1) that the administration of chloroform is exceedingly dangerous; and (2) that forcible dilatation of the cervix is perhaps still more dangerous. Therefore, the modern operation of emptying the uterus "at one sitting" should not be performed. The common statements by experts that this "operation is practically free from danger provided perfect asepsis is observed" is woefully incorrect in such cases. The safest method is Dührssen's vagino-uterine tamponade or some modification of it. It is unfortunate that it happens in a certain proportion of cases that the emptying of the uterus, even if done before it is "too late," so far as our present knowledge can indicate, and in the most careful way by a skilled expert, is followed by no improvement. The patient simply continues to grow steadily worse until death ensues from exhaustion. Notwithstanding such dangers we probably all agree that in certain cases the induction of abortion is absolutely indicated. The practitioner in charge, when in doubt, should have a consultation as

soon as possible, and should act promptly if such an operation is decided on.

Dr. Williams has adopted the following classification: reflex, neurotic, and toxemic vomiting of pregnancy. As it is generally conceded now that in the nausea and vomiting there is always some disturbance of metabolism it seems rational to drop the terms "reflex" and "neurotic," and consider that in every instance toxemia is the cause of the condition produced. This would tend to prevent carelessness on the part of those practitioners who consider that in the great majority of cases the nausea and vomiting are simply "neurotic" or "sympathetic," and that treatment can accomplish no good. So far as our present knowledge goes it seems well to consider that there are various types of toxemia of pregnancy, of which the principal are: (1) acute yellow atrophy of the liver; (2) pernicious vomiting; and (3) that form of autointoxication that produces eclampsia. One of the advantages of grouping these three varieties in such a way is that it simplifies matters much for general practitioners. This is true especially from a therapeutic standpoint because the eliminative and sedative treatment is suitable for most of the symptoms that appear in all varieties. It is somewhat interesting to note that the treatment carried out in the case here reported is very much like that of British obstetricians fifty years ago.

30 Gerrard Street East.

---

[1]Byers: *Brit. Med. Jour.*, Feb. 19, 1910.

TUBERCULIN IN DIAGNOSIS*.

By J. H. Elliott, M.B.,

Associate in Medicine and Clinical Medicine, University of Toronto.

In almost all cases of tuberculosis presented to us for diagnosis a careful study of the history, symptoms and physical signs will give us sufficient data upon which to base a diagnosis.

When we have exhausted all our methods of physical examination and have made careful clinical laboratory examination of the secretions or discharges from the suspected organs or tissues and can find no evidence of tuberculosis we are usually safe in declaring tuberculosis absent.

But at times we find that at the end of our examination we are confronted with certain signs pointing to tuberculosis, yet these signs are not conclusive. The more methodical and painstaking our examination the less frequently will we find such cases, but occasionally they do occur, and it is important to use some other method of arriving at a diagnosis.

It is here that the use of tuberculin is of greatest assistance. To-day it is applied in several different ways.

The subcutaneous method has been before the profession for a number of years. For many years there was a general hesitancy in its acceptance, from a fear that its application was fraught with harm to the patient, as was taught by Virchow; but twenty years of careful work and clinical application in the hands of earnest men has led us to accept Osler's statement that "an important point is its harmlessness." Next to the fear of harm, another factor which has tended to lessen its use in diagnosis is the belief that its application and the proper interpretation of resulting symptoms was difficult. The technic, however, is very simple and the reaction as a rule readily recognized. There is comparatively slight difference of opinion as to the amount to be used. Koch originally advised an initial dose of 1 mgm., followed in two days by 5 mgm. if negative, this by 10, the last dose repeated if still negative. The beginning dose now advised is $\frac{1}{5}$ to $\frac{1}{2}$ mgm., followed by 1, 3, 5, and if necessary 8 or 10 mgm., 10 milligrams being generally recognized as the maximum dose necessary, the interval between doses being two or three days—and if there are subjective symptoms, malaise,

*Prepared for the Academy of Medicine, Section in Medicine, Tuesday, January 11, 1910.

pain in back, aching joints following an injection, even without rise of temperature, the same dose is repeated—the larger dose is not given.

That this reaction is practically a specific one, and always denotes the presence of tuberculosis, was well shown in the proof brought forward before this Academy last year by Dr. H. M. Kinghorn, and this need not be here reviewed. Let me only add to the figures he adduced, both in man and in cattle, those of the Chief of the Bureau of Animal Industry, Washington, who reports that out of 24,784 reacting animals slaughtered, lesions of tuberculosis were found in 24,387—a percentage of 98.39. He adds to this that in one State at least the testing was known to be done in a careless and unreliable manner. Excluding this State, the proportion of cases in which the tuberculin reaction was confirmed by post mortem is raised to 98.81 per cent. The figures represent a compilation of the work of scores of individuals in all parts of the United States, working over a period of fifteen years. We require no stronger testimony of the marvellous accuracy of the tuberculin test. He reports also 126 reacting cattle from herds in the neighborhood of Washington, which were examined at autopsy by the veterinarians of the Bureau. There was only one failure to find the lesions of tuberculosis, the percentage of accuracy being over 99 per cent.

We are quite safe then in assuming that a general reaction to tuberculin denotes the presence of tuberculosis. It does not tell us what organ is affected unless there is a focal reaction, *e.g.*, in laryngeal or cutaneous tuberculosis a localized redness and swelling, with perhaps slight bleeding if surface is ulcerated; in pulmonary tuberculosis an increase in cough and sputum, harsh breath sounds and presence of rales in the suspected area.

On the other hand, will the absence of a reaction rule out the presence of tuberculosis? Generally speaking, we may say yes, with some modifications. We know that far advanced, moribund cases of tuberculosis rarely react—but this plays no part, for we are not justified in using the reaction in such cases. The diagnosis is made by other means.

Some cases of healed or encapsulated tuberculosis will not react, and, of course, the reaction will not occur in patients who have been receiving tuberculin therapeutically in doses larger than the diagnostic dose.

The one great disadvantage of this method is that it is not applicable in cases where the temperature rises above 99° or 99½°. It is of particular value in early pulmonary tuberculosis with suspicious physical signs and with no bacilli in the sputum, in joint

tuberculosis, in glandular tuberculosis and in laryngeal and cutaneous tuberculosis, for in these we may get focal reaction; though in my own experience focal reactions have been comparatively rare in pulmonary cases. The focal reaction should be of value in tuberculosis of the bladder, if no bacilli are found, for the changes may be observed by the cystoscope.

Conjunctival Reaction.

This reaction, which created much interest two years ago, is not being generally used. It causes discomfort to the patient, and may cause serious consequences in diseased or injured eyes. This, however, appears to have been due to the careless use of tuberculin, as with the tuberculin when first introduced by Koch. Solutions of 1% and 2% have been used where only .35% as recommended by Baldwin, increased if necessary to .5%, should have been used, and most of the ill results in the form of severe conjunctivitis and other inflammatory reactions appear to have been due to the use of tuberculin in conditions of the eye where we know it to have been distinctly contra-indicated.

A number of observers have brought forward autopsy and other statistics showing the reliability of the conjunctival reaction. Calmette reports in addition to those clinically tuberculous, from 55 clinically non-tuberculous who reacted and who subsequently came to autopsy, of these 49 showed macroscopic evidence of tuberculosis.

Emmet Holt reported 47 reacting cases, of which 44 were proven tuberculous clinically or at autopsy, two were not definitely tuberculous, while in one no evidence of tuberculosis could be discovered at autopsy.

With no conjunctival reaction when the test is properly applied, can we rule out tuberculosis?

In Holt's series, 556 patients (children) did not react; of these 546 were non-tuberculous; ten were tuberculous.

Of these ten non-reacting cases of tuberculosis, nine were dying or were very ill.

The test then is one which is fairly reliable.

It causes some local discomfort, but this soon passes away if properly given.

It is not to be used in strength greater than .5% of old tuberculin, nor to be used if any disease or injury of the eye be present. It is well to avoid it altogether in strumous children.

It may be of service in adults with fever. The patient must remain under observation, for the reaction may be evanescent.

The Cutaneous Test.—Von Pirquet's method, puncturing the skin through a drop of old tuberculin:

Careful investigation has seemed to prove this to be an accurate specific test for tuberculosis.

Von Pirquet reports on 200 children to whom this test was applied and who subsequently came to autopsy. Of these 68 had shown a positive reaction.

Sixty-six of these showed macroscopic tubercles;

Two were uncertain; one, however, showing pleural adhesions and hyperplasia of many lymph glands.

The second was one of mitral and aortic insufficiency following recurrent endocarditis, showing also adhesive pericarditis.

132 did not react; of these

109 were non-tuberculous;

23 were tuberculous.

These 23 tuberculous cases which did not react were made up of 13 miliary tuberculosis, 5 non-miliary, but dying in a few days of tuberculosis, 4 during measles, and one other.

He points out that many of these did not react to the first test—a second and third puncture being frequently necessary.

Emmet Holt reports on 217 young children, practically all under 3 years of age; 33 reacted, 184 were negative. The 33 reacting he classes as follows:

12 positively tuberculous (sputum, autopsy or operation).

15 probably tuberculous (evidence, other tests, history or physical signs).

6 probably *not* tuberculous.

None reacting who were positively not tuberculous. 184 non-reacting children:

10 positively tuberculous (9 dying or extremely ill and one cured child).

5 probably tuberculous.

166 probably not tuberculous.

3 positively not tuberculous (autopsy).

These published results are typical of those reported by others and allow us to conclude that the reaction in general corresponds with the pathological condition, remembering that it fails often in acute miliary tuberculosis, in rapidly failing moribund children, and during measles.

It is of value in pointing out the existence of hitherto unsuspected tuberculosis, and has led in many cases to further careful clinical study of cases to discover, if possible, other evidence of tuberculosis. Prolonged search and repeated examination frequently revealed bacilli in the sputum, while in other cases gradual

development of physical signs afforded evidence as to the accuracy of the test.

The results of the application of Moro's 50% ointment of old tuberculin in lanolin, and the stich reaction of Epstein and Schick injecting 1-100 mgm. O.T. under the epidermis seem to correspond to those of the Von Pirquet method.

The average amount of Moro ointment used is far too much. One manufacturing firm sends out packages directing us to apply vigorously ½ gm. of the ointment, *i.e.*, 250 milligrams of O.T., when we know 1-10 to 1 mgm. hypodermically will produce a reaction in susceptible persons.

I have seen marked general reaction produced through the use of Moro according to directions, and also through the application of O.T. to a scarified skin as for vaccination—a method which is *not* Von Pirquet's.

Von Pirquet's method is a single puncture through a drop of O.T. placed on the skin.

The cutaneous test, like the subcutaneous, is a very delicate test, and will not tell us whether we have to deal with a pronounced active tuberculosis or with a latent infection producing no symptoms. Hence, when used upon a patient, we may generally feel that the result is conclusive, especially when test has been repeated if at first negative, but we have still to decide whether the symptoms present are due to a tubercular process or to some other form of disease. A mistake such as the following is sure to occur unless the test is used only in conjunction with a thorough physical examination and a careful consideration of the history, symptoms and physical findings. A patient came into our wards complaining of weakness and cough; she was pale, thin and gave history of tuberculosis in her family. The student assigned to the case took the history, carefully examined the chest, and found physical signs suggestive of slight tuberculous invasion of one apex. The Moro reaction was positive. Temperature for several days was normal in morning, reaching 100° or over in evening, and he made a diagnosis of pulmonary tuberculosis. He had overlooked a slight enlargement of the spleen, and prostration more rapid than was compatible with ten days' illness with early tuberculosis, and it did not occur to him to make a Widal test, but this had shown marked clumping.

I feel that a routine use of these tests in general practice is to be avoided unless one thoroughly understands their significance, there is such danger of using them to the exclusion of other and better methods of diagnosis.

Occasionally failures and unexplained reactions occur, yet the

occurrence of a reaction creates a very strong probability, amounting practically to a certainty, that tuberculosis is present. We must depend upon physical examination to tell us which organ is affected. For example:

We apply the test in one of its forms to a child or adult under our care for some acute respiratory trouble. A positive reaction only tells us there is a focus latent or active in the body. It does not tell us that the present symptoms are caused by a tuberculous involvement. This we must bear in mind if we are to interpret the reaction properly.

The conjunctival and skin tests have been too recently introduced to lay down absolute rules as to the class of cases in which they are to be employed.

For the present the skin reaction seems to be the best to use in children, and its greatest value seems to be in children. In adults there is such a large percentage of latent tuberculosis that its real value is not yet understood. It may be that the skin reaction is positive in more latent adult cases than is the conjunctival, as stated by Calmette.

Personally I prefer the subcutaneous test in adults, but frequently use the skin reaction as easier of application, and allowing the patient more freedom and less discomfort.

It is comparatively seldom, however, that the tuberculin test is required in adults.

611 Spadina Ave.

Surgery

WALTER MCKEOWN, HERBERT A. BRUCE, W. J. O. MALLOCH, WALLACE A. SCOTT, GEORGE EWART WILSON.

Protective Appendicitis. ROBERT T. MORRIS, *Medical Record.*

Morris classifies appendicitis into: (*a*) Protective appendicitis, (*b*) appendicitis with intrinsic infection, (*c*) syncongestive appendicitis and (*d*) appendicitis with extrinsic infecton.

"Protective appendicitis is an irritative lesion occurring in the normal involution of the appendix, and dependent on irritation of nerve filaments which persist in the contracting hyperplastic connective tissue which has replaced other normal structures of the appendix."

Senn first described the result of this form of appendicitis in 1894, and called it appendicitis obliterans, but did not separate it from infective lesions.

Morris first called it fibroid degeneration of the appendix, and now introduces the term "protective appendicitis" for the first time. The reason for this depends on (*a*) structures in the appendix which are susceptible of acute infective processes are replaced by connective tissue, and (*b*) the nerve filaments persist longest, and being pressed on by the contracting fibrous tissue, are irritated, and as a consequence there is a permanent local hyperleucocytosis which seems to protect the appendix from bacterial attack.

The symptoms are: (1) Local discomfort in the appendix region caused by the sensory nerves being entrapped in contracting connective tissue. This discomfort persists for years, and is not enough to send the patient to bed. It is not necessary to remove these appendices on the ground that infection may suddenly supervene. (2) Sympathetic nerves are also irritated by the contraction of the fibrous tissue, and there follows chronic derangement of the bowel function.

There are three points for diagnosis when they are seen in connection with the subjective history:

(1) Hypersensitiveness on deep pressure at the site of the right lumbar ganglia situated 1½ inches to the right of the navel.

(2) Distention of the caecum and ascending colon with gas. This is not always present, and is due to continued irritation of

the motor nerves of the bowel, leading ultimately to relaxation of the muscles of the bowel.

The third point is the palpation of an appendix which is harder than normal.

The treatment depends on the particular case. Many patients will obtain relief mentally on finding that they are not in danger. In others it will be advisable to remove the appendix.

W. A. S.

The Diagnosis and Treatment of Duodenal Ulcer. B. G. A. MOYNIHAN. *Lancet*, Jan. 1st, 1910.

"The symptoms of duodenal ulcer are definite and not easily to be mistaken, and they appear in an order and with a precision which are indeed remarkable."

"The ulceration may begin early in life, and the symptoms may, with periods of repose, continue up to middle age or even to advanced years."

The patient is usually a male between 25 and 45 years of age, and he tells you that insidiously he began to have a sense of weight and fulness in the epigastrium after meals, and soon he noticed that it came on usually two hours or so after the meal. Many patients have the pain when they are commencing to feel hungry ("hunger pain"), and the taking of food makes this pain better. These patients carry a biscuit with them and take it at the onset of the pain. The patient not seldom tells you that the taking of food eases the pain. The pain often wakens the patient at 2 o'clock in the night. Sometimes the pain is preceded by a sense of fulness, which is relieved by the belching of wind.

Vomiting is very infrequent, and the patient has a good appetite. Perhaps the most characteristic feature of duodenal ulcer is the periodicity of the symptoms and their occurrence from time to time in attacks and complete abeyance in the intervals. The attacks come on as a result of exposure to cold. These last from two or three weeks to several months, and may frequently be cut short by a few days' rest in the country.

These symptoms may be present for years without producing any physical signs.

Hemorrhage is sometimes an early, but is more often a late symptom. The occurrence of hemorrhage is of far more serious import than that from a gastric ulcer.

The hemorrhage may be copious, or it may occur insidiously, and may then cause continued weakness and anemia.

When the attacks recur, a diagnosis of chronic duodenal ulcer can be made, and the treatment is surgical.

The surgical treatment may consist in (1) excision of the ulcer and restoration of the duodenal canal; (2) excision of a cylinder of the duodenum by closure of the distal end and union of the pyloric cut end with the side of the second portion of the duodenum; (3) partial resection of the duodenum, followed by closure of both ends, and a gastro-enterostomy; and (4) gastro-enterostomy.

W. A. S.

Ophthalmology

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

Myopia. HENRY EALES. *Birmingham Medical Review*, April, 1910.

This paper, given by Mr. Eales on the occasion of the Middlemare lecture, is too long to readily lend itself to review, but a summary of Mr. Eales' principles of prevention or prevention of too great a development of the degree of myopia in the young, will be of interest to the general practitioner. Briefly these are as follows:

1. Education and the use of the eyes for near work should not be begun too early; at six or seven years of age is quite soon enough.
2. The light should be good, and daylight only, for the young.
3. Continuous studies should not be too long.
4. Bad positions in reading and writing should be avoided.
5. Glasses should be worn by all astigmatic children, by all myopic ones and by hypermetropes who have difficulty.
6. Slates and pencils, which make the written characters less decipherable, should be avoided, and should be replaced by paper, pen and ink. As far as possible teaching should be oral, and blackboards, maps, diagrams and other methods employed in which the eye is used for distant vision, rather than near vision employed, especially for the young.
7. Homework not done under proper conditions or supervision should, as far as possible, be discarded.
8. School books should be printed in large, clear print.
9. Proper desks and seats adapted to the height of the scholars should be used.

W. H. L.

Ocular Palsies in Tabes. WILLIAM CAMPBELL POSEY, of PHILADELPHIA. *Journal of American Medical Association*, April 16, 1910.

In an interesting paper on this subject, read at Buffalo, the author impresses upon us the importance of examining the eyes of tabetics. Indeed, he says, the pupillary, muscular and optic nerve changes are so constant and so characteristic that, given in addition

to even one of these, the history of previous infection by syphilis and another characteristic of tabes, such as loss of knee-jerk diminution in muscular tonus of the legs, or marked disturbance of the bladder or sexual functions, the diagnosis of tabes becomes possible. The first ocular palsy mentioned is transient loss of power of some one of the ocular muscles, appearing early in the disease, lasting for sometimes only a few hours, though sometimes as long as a few weeks. The patient complains of double vision, and it is often a symptom he remembers distinctly as having happened before others presented. Next, the ocular palsies which occur later on in the disease are more apt to be permanent. In studying the relative frequency of the different nerves involved, Uhthoff, after having examined a very large number of cases, found the third nerve involved in 54 per cent., the sixth nerve in 33 per cent. and the fourth nerve in 8 per cent. of his cases. There was paralysis of accommodation alone in 5 per cent. of the cases. Everyone is familiar with the frequency of occurrence of the Argyle-Robertson pupil. Uhthoff found it present in 65 per cent. of his cases. Another observer has tabulated the numerous well-known symptoms of tabes, and it is seen that those relating to the eye, as seen below, are prominent in the percentage column:

Argyle-Robertson pupil	79%
Irregularity of pupils	41.5%
Palsy of ocular muscles	30%
Optic atrophy	21.5%
Diplopia	19%

W. H. L.

Reviews

Modern Surgery: General and Operative. By J. CHALMERS DACOSTA, M.D., Professor of Clinical Surgery in the Jefferson Medical College, Philadelphia. Sixth Edition; greatly enlarged. Octavo of 1,502 pages, with 966 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company. 1910. Cloth, $5.50 net; half-morocco, $7 net. The J. F. Hartz Co., Limited, Canadian Agents.

In the preface of the first edition of the volume it is stated that the object of the book is to fill the place between "the complete but cumbrous text-book and the incomplete but concentrated compend."

It deals with general surgery, and there is no place for the consideration of eye, ear, nose and throat, and women's diseases.

The present edition is for the same object, and is a splendid work. It is thoroughly revised, and is up-to-date in all respects. There are many illustrations, and all of them are selected with great attention to clearness and detail. Many operations are described minutely, and throughout the treatment is given at some length. It is a book which can be unhesitatingly recommended, especially to medical students.

W. A. S.

Congenital Dislocation of the Hip. By J. JACKSON CLARKE, M.B., Lond., F.R.C.S.; Senior Surgeon to the Hampstead and North-west London Hospital; Surgeon to the Royal National Orthopedic Hospital. Publishers: Baillière, Tindall & Cox, 8 Henrietta Street, Covent Garden, London.

A splendid monograph on a most important subject. In the preface the author states: "It is now fully established that the manipulative method of treatment of congenital dislocation of the hip-joint, when skilfully carried out at a suitable age, results in the cure of nearly 75 per cent. of these previously incurable and usually distressing cases,"—surely a sufficient justification for this method of treatment, and for the publication of this monograph. While the work is perhaps of more particular interest to the surgeon—and especially the orthopedic surgeon—it cannot fail to engage the serious attention of the general practitioner. The work deals with the subject under the following heads: Pathological anatomy, clinical examination and radiographic study, the manipu-

lative operation, post-operative treatment, ultimate results, author's open operation, and concludes with a series of forty consecutive cases. T. B. R.

"Spondylotherapy." Spinal concussion and the application of other methods to the spine in the treatment of disease. By ALBERT ABRAMS, A.M., M.D. (University of Heidelberg), F.R. M.S.; Consulting Physician to the Mount Zion and French Hospitals, San Francisco, etc., etc. Published by The Philopolis Press, Suite 406, Lincoln Building, San Francisco, California.

To glance down the list of twelve or more works by this author (duly set forth on the opposite page from the title page of the above work), and to contemplate the wide range of subject matter there considered is sufficient to impress one with the idea that the writer is at least conscious of his own worth. But to *read* this work! to consider its enormous range, dealing as it does with most of the diseases, of all the various symptoms, in brief, almost anything you may wish to be enlightened about—from Backache to Blood-pressure, Syphilis to Spinal Meningitis, or Consumption to Constipation, here you have it, and the up-to-date means of cure! What a thrill of pride and satisfaction it gives one to know it is now possible to approach disease in a truly scientific manner, and bid it depart! True, the author admits that biniodide of mercury and iodide of potassium are useful in the treatment of syphilis, and this is something worth knowing, if not entirely new. Verily this is a wonderful work, and one which would require the best part of a single issue of this journal to do justice to an extended review of its marvellous merit! Still, it cannot exactly be described as exhaustive; we have not noticed any application of Spondylotherapy for the cure of Pediculosis; but that was doubtless an oversight, and may possibly be rectified in a later edition.

Taking it all in all, this work (and his other numerous books) should serve to advertise the author well, more especially with that large and influential body known as the "general public," who cannot fail to be impressed by its profound erudition.

T. B. R.

International Clinics. A quarterly of illustrated, clinical lectures and especially prepared original articles. By leading members of the medical profession throughout the world. Vol. I., Twentieth Series, 1910. Philadelphia and London: J. B. Lippincott Company.

This, the first volume of the series for 1910, is of the standard of previous productions. The special articles are on serum diagnosis of syphilis, by Homer F. Swift, Hidego Noguchi, and B. Sachs. These are especially good and worth careful study. The greater part of the work is devoted to treatment, medicine, surgery, gynecology, pediatrics, neurology. Considerable space is also given to progress of treatment, medicine and surgery during 1909.

G. C.

Diseases of the Stomach and Intestines. By ROBERT COLEMAN KEMP, M.D., Professor of Gastro-Intestinal Diseases, New York School of Clinical Medicine. Octavo of 766 pages, with 279 illustrations. Cloth, $6.00 net; half morocco, $7.50 net. W. B. Saunders Company: Philadelphia and London. Canadian Agents: The J. F. Hartz Co., Ltd., Toronto. 1910.

During the last few years a considerable number of works on diseases of the stomach and intestines have appeared, and this volume is the last of these publications. The author's intention is to produce a book, giving simple and practical methods in the study of diseases under consideration. With this object in view he has given special attention to illustrations by photographs and sketches of methods of diagnosis and treatment. This is a commendable feature of the work.

With regard to the manner in which the subject matter is treated, we are not impressed very favorably. The book contains a great number of statements which would stand a good deal of sifting and "boiling down." We feel that the work is too large for the manner in which it is written, no attempt being made to treat the subject in a philosophical manner.

G. C.

American Practice of Surgery. Volume V. New York: Wm. Wood & Co.

Volume V. of this system comprises a lengthy treatise upon the surgery of the head, sections dealing with the face and cranial nerves follow, the remainder of the volume being occupied with the surgical affections of the eye, ear, pharynx and larynx. In general the standard set by previous volumes has been maintained, but in one respect we are of the opinion that a marked advance has been made. We refer to the article on Brain by Archibald, of Montreal. The subject, a difficult one at any time, has been handled in a masterly manner, both from the scientific and practical stand points, and is in every way a most creditable piece of work.

G. E. W.

Dominion Medical Monthly

And Ontario Medical Journal

EDITED BY

Medicine: Graham Chambers, R. J. Dwyer, Goldwin Howland, Geo. W. Ross, Wm. D. Young.
Surgery: Walter McKeown, Herbert A Bruce, W. J. O. Malloch, Wallace A. Scott, George Ewart Wilson.
Obstetrics: Chas. J. C. O. Hastings, Arthur C. Hendrick.
Pathology and Public Health: John A. Amyot, O. R. Mabee, Geo. Nasmyth.
Psychiatry: Ernest Jones, W. C. Herriman.
Ophthalmology: D. N. Maclennan, W. H. Lowry.
Rhinology, Laryngology and Otology: Geoffrey Boyd, Gilbert Royce.
Gynecology: F. W. Marlow, W. B Hendry.
Genito-Urinary Surgery: T. B. Richardson, W. Warner Jones.
Anesthetics: Samuel Johnston.

GEORGE ELLIOTT, MANAGING EDITOR

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

VOL. XXXVI. TORONTO, JUNE, 1910. No. 6.

COMMENT FROM MONTH TO MONTH.

On the Report of the Committee of the American Gynecological Society on the Present Status of Obstetrical Education in Europe and America, and on Recommendations for the Improvement of Obstetrical Teaching in America.

From the Report one learns that in Great Britain the teaching of obstetrics is carried out chiefly by the giving of didactic lectures, thirty or forty in number, extending over the two final years usually, and, in addition, clinical instruction in the wards of the lying-in departments. Practical obstetrics is taught by the student receiving demonstrations in the museum and by attendance upon about fifty cases as spectator. Also some universities demand actual attendance upon at least twenty cases in addition to those cases just witnessed.

The usual diseases of women and minor surgical procedures are also taught by the obstetric teachers.

In Germany obstetrics seem to be combined both with gynecology and with the diseases of infants. As is to be expected, much more attention is paid there to the pathology of disease, and the students receive a very thorough course in microscopic diagnoses, and in their final year are instructed in the art of cystoscopy, and receive demonstrations weekly for nine weeks in pathological anatomy with

the epidioscope, microscope, etc. Each student in the final semester must live one month in the clinic, where he observes and *conducts* forty (40) labors and performs minor operations.

At Vienna, of the five-year course one year is occupied chiefly by obstetrics and gynecology. The lectures occupy 10 hours a week. Besides, he *witnesses* a large number of labors and performs minor operations, such as repair of perineal lacerations, episiotomy, manual extractions, etc. The manikin is much used in teaching obstetrical manipulations. Besides, there is instruction in the examination of pregnant women. This consists in examinations of parturient women also and operations upon the manikin.

At Zurich the theoretical lectures are *not* obligatory, operations are done on the manikin, and on rare occasions on the living subject under supervision.

The first examination consists in a clinical, oral and operations on the manikin.

France would seem to combine more closely diseases of women with the teaching in obsterics. Didactic teaching is largely done away with, and much more time devoted to tutored classes, in wards and museums. The teaching extends over two terms of almost one year's duration.

Italy seems to cling to the didactic method still, and the final examination is purely theoretical, no clinical or oral examination being required.

In the United States, as one would expect, many methods of teaching are followed.

In Columbia obstetrics are studied during the second, third and fourth year, the fourth year being devoted, however, to the purely practical side of the subject, but the pathology of disease appears not to be followed so far as in the German schools. Cornell also has the three-year course. Harvard Medical School seems to have one of the best systems of instruction. During the third year the student receives 64 hours of lectures, 32 hours of recitations and 32 hours of conferences. In addition, the clinical instruction consists in two weeks day and night in hospital residence devoted to obstetrical duties. At the end of the two weeks an additional week in following his cases and writing reports on them. The fourth year is elective. Here the class works in sections of from six to ten students. For two weeks he is in hospital residence, and attends six to ten patients under the supervision of the instructor. The next two weeks he follows the patients and writes reports upon them. He receives a lecture and a visit is made to the wards every day, where ante-partum and post-partum examinations are made. The manikin and foetal cadaver are employed. Finally a thesis

is required upon some subject of choice. The graduate may attend over thirty cases personally. Gynecology is taught in both the third and the fourth year.

Johns Hopkins follows much the same methods, but also gives an optional course in obstetrics, histology and pathology.

In McGill University the teaching of obstetrics seems more after the manner of the Harvard School. Perhaps, like the University of Toronto, more attention is paid to the didactic lectures than do the American schools. Bedside instruction is followed out as much as possible, however, and the practical side is carefully kept in mind. The course is graded and lectures given separately to the third and the fourth year, and a clinical examination similar to that in medicine and surgery is an important part of the final examination.

Obstetrics is combined with diseases of infants, whilst gynecology forms a separate department in McGill, as it does in the University of Toronto.

Obstetrics in Toronto University is taught in both the third and the fourth years. In the third year physiological obstetrics are taught by means of didactic lectures and models and charts. In the final year pathological obstetrics, *i.e.*, abortions, miscarriages, puerperal infections, are gone into thoroughly. The students receive didactic lectures and also clinical instruction. The didactic lectures in the fourth year are given to classes of about twenty men, whilst clinical instruction in the management of deliveries, in ante-partum and post-partum examinations are given to smaller classes of about six to ten men. The uses of the pelvimeter, operations upon the manikin and lantern slide demonstrations are also utilized to give the students as practical a grasp of the subject as possible. Besides, an out-patient clinic in obstetrics is carried on, and the senior students are allowed to attend these patients at their homes under the supervision of the instructors.

In the University of Toronto didactic lectures still hold a place, but the tendency is to have them given to small classes and to take on more the character of a conference, such as Harvard Medical School employs. The theatre lecture is given still, especially in the junior years, where it is thought a general survey of the subject is important.

Recommendations:

The committee suggested that the teaching of obstetrics should occupy at least two years of the medical course, and that the number of cases personally conducted by each student should be at least six under supervision and instruction.

Character of Instruction.—Of the following methods, viz.:

1. Didactic lectures.

2. Clinical lectures.
3. Clinical conferences.
4. Ward classes and touch courses.
5. Hospital and out-patient instruction.
6. Manikin practice in operative obstetrics.
7. Recitations.

The committee strongly recommend the clinical lectures and conferences and ante-partum examinations, *i.e.*, inspection, palpation, pelvimetry, fetometry, vaginal examinations, etc., and that a two weeks' hospital residence should be required before the out-patient practice.

Scope of Instruction.—It is recommended that as obstetrics at present includes pregnancy and parturition, their complications and consequences, and the complete recovery of women after labor, the instruction should include the treatment of these conditions.

A. C. H.

The Hamilton school of anatomy was incorporated by the Ontario Legislature at the session recently closed. The incorporators are Drs. Ingersoll Olmsted, Archibald Edward Malloch and Alexander Bryson Osborne. All are well-known practitioners of the Ambitious City, and in their petition for incorporation set forth that they desired to "establish, carry on and maintain a school in or near the said city of Hamilton for the advanced study of anatomy and surgery."

By the Act of Incorporation, the Hamilton School of Anatomy is empowered not only to carry on such school, but to have lectures delivered as the advance of surgical knowledge may demand.

The said school shall also be a recognized medical school within the meaning and purpose of the Ontario Anatomy Act, and is therefore qualified to receive dead bodies for dissection under the provisions of said Act.

The progressive spirit manifested by the promoters of the Hamilton School may be imitated by others, which might result in a serious lessening of dissecting material to the established medical teaching institutions of the Province.

Scientific research laboratories such as those conducted under government auspices, the Carnegie Institute at Washington, the Henry Phipps Institute at Philadelphia, the Rockefeller Institute for Medical Research at New York, as well as the research

laboratories of large corporations and manufacturers' associations, are gradually superceding work in this direction in universities and colleges.

Freed from the cares and duties of teaching, with efficient organization, equipment and endowment either by governmental or by private munificence, these institutions are in a position to render the very best assistance to the original investigator. Working systematically along well-defined lines, and entirely free from financial and administrative concern, many men of reputation have been attracted to these institutions, and as a result the universities and colleges suffer.

Universities and colleges are all too often hampered in their work and expansion by meagre appropriations necessarily distributed over different departments. Still universities have extended. Student bodies have grown numerically larger, and consequently academic requirements have correspondingly increased. As a consequence the research scientist of the university has not the time to devote to this branch of work, when his academic duties demand an ever-increasing proportion of his time.

It would appear, then, that universities will in the future relinquish the pursuit of scientific research to the exactions of the purely educational machinery, and the work be relegated in large part, if not wholly, to those special institutions, so eminently endowed and equipped.

Tremendous fortunes in patent medicines are said by an American medical journal to about be a thing of the past. The Pure Food and Drugs Acts of the United States are looking after that.

For many moons, however, many people have put their trust in patent medicines, and doubtless will continue to do so, believing that the physician is an interested party.

As one patient after another hawks around prescriptions, so patent medicine devotees are very helpful patent medicine advertisers.

The *Montreal Medical Journal* is authority for the statement that eight million dollars are spent annually in Canada for these nostrums. Divided amongst the six thousand physicians of Canada, this would mean an annual income of $1,300. Considering that the average annual income of the medical profession has recently been put down at $1,250, the waste on patent medicines

would very nicely tide one over the starvation period in medical practice.

There seems to be in cities an ever-increasing number of physicians who do their own prescribing; and it might be well to the financial advantage of the medical profession if, in the matter of pills and potions, coughs and colds, the people were met a little more than half-way in the matter of fees for minor ailments.

A secretary of public health for the Dominion of Canada, whilst not exactly advocated in these pages before, has been in the respect of a Bureau of Public Health. The Canadian Medical Association for nine years now has pressed this matter upon the federal Prime Minister and the Honorable the Minister of Agriculture.

"The nineteenth century was the century of the United States; the twentieth century is to be the century for Canada." Why, then, not go the whole distance and at least keep pace with the United States in public health matters? Below we give in full the bill Senator Owen, of Oklahoma, has introduced into the Senate of that country to provide for a separate official department having equal rank with other departments of the Cabinet.

"*Be it enacted, etc.*, That there is hereby established a department of public health under the supervision of the Secretary of Public Health, who shall be appointed by the President a Cabinet officer, by and with the consent of the Senate, at a salary of $12,000 per annum, with like tenure of office of other Cabinet officers.

"Sec. 2. That all departments and bureaus belonging to any department, excepting the Department of War and the Department of the Navy, affecting the medical, surgical, biological, or sanitary service, or any questions relative thereto, shall be combined in one department, to be known as the Department of Public Health, particularly including therein the Bureau of Public Health and Marine Hospital Service, the medical officers of the Revenue-Cutter Service, the medical referee, the assistant medical referee, the surgeons and examiners of the Pension Office; all physicians and medical officers in the service of the Indian Bureau or the Department of the Interior at old soldiers' homes, at the Government Hospital for the Insane, and the Freedman's Hospital and other hospitals of the United States; the Bureau of Entomology, the Bureau of Chemistry and of Animal Industry of the Department of Agriculture; the hospitals of the Immigration Bureau of the Department of Commerce and Labor; the emergency relief in the

Government Printing Office, and every other agency of the United States, for the protection of the health of the people of the United States, or of animal life, be, and are hereby transferred to the Department of Public Health, which shall hereafter exercise exclusive jurisdiction and supervision thereof.

"Sec. 3. That the official records, papers, furniture, fixtures, and all matters, all property of any kind or description pertaining to the business of any such bureau, office, department, or branch of the public service is hereby transferred to the Department of Public Health.

"Sec. 4. That the Secretary of Public Health shall have supervision over the Department of Public Health, and shall be assisted by an Assistant Secretary of Public Health, to be appointed by the President, by and with the advice and consent of the Senate, at a salary of $6,000 a year, with such duties as shall be prescribed by the Secretary not inconsistent with law.

"Sec. 5. That the secretary of public health shall be authorized to appoint such subordinates as may be found necessary. There shall be a chief clerk appointed, at a salary not to exceed $3,000 a year, and such other clerks as may from time to time be authorized by Congress.

"Sec. 6. That the officers and employees of the public service transferred to the Department of Public Health shall, subject to further action by Congress, receive the salaries and allowances now provided by law.

"Sec. 7. That it shall be the duty and province of such department of Public Health to supervise all matters within the control of the Federal Government relating to the public health and to diseases of animal life.

"Sec. 8. That it shall gather data concerning such matters; impose and enforce quarantine regulations; establish chemical biological, and other standards necessary to the efficient administration of said department; and give due publicity to the same.

"Sec. 9. That the Secretary of Public Health shall establish a bureau of biology, a bureau of chemistry, a bureau of veterinary service, a bureau of sanitary engineering, reporting such proposed organizations to Congress for suitable legislation relative thereto.

"Sec. 10. That all unexpended appropriations and appropriations made for the ensuing year shall be available on and after July 1, 1910, for the Department of Public Health, where such appropriations have been made to be used by any branch of the public service transferred by this act to the Department of Public Health. It shall be the duty of the Secretary of Public Health to

provide, on proper requisition, any medical, sanitary, or other service needed of his department required in another department of the Government.

"Sec. 11.—That any other department requiring medical, surgical, sanitary, or other similar service shall apply to the Secretary of Public Health therefor wherever it is practicable.

"Sec. 12. That all officers or employees of the Government transferred by this Act to the Department of Public Health will continue to discharge their present duties under the present organization until July 1, 1910, and after that time until otherwise directed by the Secretary of Public Health or under the operation of law.

"Sec. 13. That all laws or parts of laws in conflict with this Act are hereby repealed."

At present in the United States public health matters are governed from at least eight separate government bureaus; in Canada, five. That confusion often arises, that work and official business is often hampered and even nullified, there is every reason to believe. Efficiency and progress in public health affairs can only be successfully effected through the medium of a responsible department. The Canadian Medical Association should not lose sight of this very important project, and should continually bring its strength and influence to bear upon the Federal Government in the matter.

That city milk supplies are being improved, and will more and more be improved is abundantly evidenced on every hand.

There is one question, however, upon which medical men should get together and agree, viz., Pasteurization.

Recently we are told that an eminent pediatrist of New York, Dr. Louis Fischer, has condemned the commercial Pasteurization of milk in scathing terms. That is all right; so does everybody. There are some people, even amongst physicians, who will not understand the difference between "sterilized" milk, "commercially Pasteurized" milk and "Pasteurized" milk.

Opponents of present-day "Pasteurized" milk (approximately 145° F. for 30 minutes and immediately cooled) are eternally ringing in "sterilized" and "commercially Pasteurized" milk, and that, too, in spite of the fact that nobody advocates those: A case of "drawing the herring, etc."

If someone would only be kind enough to put upon record specific instances of harm, such as rickets, scurvy, etc., which have

been caused by Pasteurized milk, then we would have something authoritative.

The new Health Commissioner of New York, Dr. E. J. Lederle, holds in the *Journal A. M. A.*, March 19th, 1910, that in the future the milk supplies of large cities will be under strict control, federal, state and municipal, as regards the production, transportation and distribution.

The grades of milk he holds will be as follows: *Infants' Milk*—Distributed from infants' milk depots and by dealers. Certified milk, raw. Clean milk from tested cattle, Pasteurized. Modified milk from either of the above grades. *Family Milk*—Clean, raw milk from tuberculosis-free herds. Clean Pasteurized milk from such herds. Clean skim milk, raw or unpasteurized. All cream, except that from certified or guaranteed milk, to be Pasteurized and sold according to the butter-fat it contains. Milk from untested herds will be permitted to be sold when properly Pasteurized, as well as milk from cows which have been tuberculin-tested and have reacted, but which it has not been deemed necessary to destroy.

Certified milk is said to be the ideal. Ideals are mostly visionary, but it is well to have them and ever keep them before us. The word just below ideal is standard. Pasteurized milk should be the standard to go by; and the protagonists in this great matter might well adopt as their slogan—Clean Milk Pasteurized.

News Items

CANADIAN MEDICAL ASSOCIATION.

TORONTO meeting, 1910, was considerably the largest meeting ever held—over four hundred and thirty were in attendance.

To the President-elect, Dr. Geo. E. Armstrong, Montreal, and to the new General Secretary, Dr. E. W. Archibald, Montreal, we extend our hearty congratulations, and wish them the best success for 1911.

CONGRATULATIONS are due to Dr. Adam H. Wright, the President, who was untiring in his efforts to promote a successful meeting, and who was particularly anxious that outsiders should be well looked after and made to feel at home.

DOMINION registration was again on the boards; and it is understood an amicable and satisfactory understanding has been arrived at, so that the goal is now probably nearer than ever before. Dr. T. G. Roddick has labored long and earnestly in this direction, and it is hoped his efforts will be crowned with complete success in not later than a couple of years.

MONTREAL was selected as the place of meeting in 1911. With the President-elect as Chairman of the Executive Council, Dr. James Bell, Chairman of the Finance Committee, the new General Secretary located there, and the *Montreal Medical Journal* to become The Journal of the Canadian Medical Association, as soon as matters of transfer can be satisfactorily arranged by the Finance Committee, and Dr. Andrew Macphail, the clever, versatile *litterateur*, editor of the official journal, great things may be expected for the future of the Association.

THE Committee on Necrology was placed with Dr. J. H. Elliott, Toronto, as Chairman.

THE Committee on Reports of Officers was placed in charge of Dr. Ingersoll Olmsted, Hamilton.

THE Committee on Medical Education will consist of R. A. Reeve, Chairman, James Bell, Alexander McPhedran, F. N. G. Starr, F. G. Finley, Murray Maclaren, C. J. Fagan and George E. Armstrong.

THE Committee on Amendments to the Constitution and By-Laws will be in charge of Dr. H. B. Small, Ottawa, who was also re-elected Treasurer.

THE Committees on Medical Legislation and Public Health and Hygiene were placed in charge of Dr. A. T. Shillington, Ottawa, with power to add to his number.

THE Committee on Medical Inspection of Schools will be John Stewart, Chairman, Helen MacMurchy, Secretary, C. J. Fagan, Jaspar Halpenny, A. McPhedran and J. D. Lafferty.

THE Vice-President for the Province of Quebec will be Dr. A. Simard, Quebec, and the local Secretary, Dr. Campbell Howard, Montreal.

FINANCE COMMITTEE.—Notice of motion having been given last year at Winnipeg by Dr. S. J. Tunstall, Vancouver, to increase the Finance Committee from five to seven, the Executive adopted this amendment and elected the following Finance Committee: James Bell, Montreal, Chairman; J. T. Fotheringham, Toronto; Murray Maclaren, St. John; F. G. Finley, Montreal; F. N. G. Starr, Toronto; R. J. Blanchard, Winnipeg, and S. J. Tunstall, Vancouver, with President Adam H. Wright, Toronto, and General Secretary, Dr. E. W. Archibald, Montreal, ex-officio.

THE Executive Council elected at the first general session were: C. J. Fagan, Victoria; Ingersoll Olmsted, Hamilton; George E. Armstrong, Montreal; A. T. Shillington, Ottawa; James Bell, Montreal; F. N. G. Starr, Toronto; J. T. Fotheringham, Toronto; J. H. Elliott, Toronto; John Stewart, Halifax; A. McPhedran, Toronto; R. A. Reeve, Toronto; Murray Maclaren, St. John; Alex. McNeill, Summerside, P. E. I.; J. D. Lafferty, Calgary; F. G. Finley, Montreal. These with the representatives from the affiliated provincial societies will constitute the Executive Council for the ensuing year. Dr. Geo. E. Armstrong, Montreal, was elected Chairman.

THE exhibition of pharmaceutical products was a very fine one and most satisfactory arrangements were made to display the

different exhibits. This was in charge of a Committee with Dr. Samuel Johnston, Chairman, and Dr. W. B. Hendry as Secretary. Amongst those who exhibited we noticed the names of H. K. Wampole & Co., Perth, Ont.; The Wingate Chemical Co., Montreal; Burroughes, Wellcome & Co., London and Montreal; The Chas. H. Phillips Company, New York; Fairchilds Brother and Foster, New York; Brand & Co., London and Montreal; The Denver Chemical Co., New York; Lloyd Wood, Toronto; Waterbury Chemical Company, Toronto; J. B. Lippincott Co., Philadelphia and Montreal; The J. F. Hartz Co., Toronto; Dr. Kathern Storm, Supporters; and Nauheim Salts.

Report of General Secretary.—At the Annual Meeting in Winnipeg last year there were 342 in attendance, the largest meeting in the history of the Association, the only one which nearly approached it in point of numbers being the Montreal meeting of 1902, where there were present 329. Of the 342 in attendance, 8 registered from British Columbia, 16 from Alberta, 21 from Saskatchewan, 187 from Manitoba, 136 being from Winnipeg, 72 from Ontario, 11 from Quebec, 8 from the Maritime Provinces and 19 guests. The meeting was an exceedingly well-organized one and the visiting delegates were most enjoyably entertained by the profession of Winnipeg.

Resolution re antitoxins and other sera:

Whereas, The health of the people of Canada is of national importance;

Whereas, The use of antitoxin has reduced the death rate of diphtheria from 35 per cent. to 10 per cent.; and

Whereas, A further substantial reduction may be effected by the use of larger doses; and

Whereas, The cost of large doses of antitoxin is almost prohibitive to the poorer people; and

Whereas, The antitoxin used in Canada comes largely from foreign countries, and is frequently shipped long distances under unknown conditions; and

Whereas, Antitoxin is a substance, the stability of which is easily interfered with; and

Whereas, There is at present no Canadian supervision or examination as to purity or potency of sera sold or used in Canada; be it therefore

Resolved, That we, the members of the Canadian Medical Association, respectfully petition the Government of the Dominion of Canada to establish a Laboratory with all necessary accompaniments for the production of antitoxin and other sera and to distribute them throughout Canada at the cost of production. This was adopted by the Executive Council on motion of C. J. Fagan, Victoria, and A. McPhedran, Toronto, and ordered incorporated in the report of the Executive to the Association, which was subsequently received and adopted by the general body. The matter was then referred to the Committee on Medical Legislation for action, whose Chairman is Dr. A. T. Shillington, Ottawa.

Dr. Francis Lee, of Grand Rapids, Mich., and Dr. Myer, of Cobden, Ont., are in Montreal taking a private course in gynecology with Dr. Lapthorn Smith.

At a meeting held at Washington, May 2, it was decided to form an American Psychopathological Association. The following officers were elected: President, Dr. Morton Prince (Boston); Secretary, Dr. G. A. Waterman (Boston); Committee, Drs. A. R. Allen (Philadelphia), August Hoch (New York), Ernest Jones (Toronto), Adolf Meyer (Baltimore), and J. J. Putnam (Boston). The *Journal of Abnormal Psychology*, edited by Drs. Donley, Jones and Prince, is to be the official organ of the Association. Papers were read at the meeting by Drs. Brill, Jones, Prince, Putnam and Waterman.

Publishers' Department

A NEW PATHOGNOMIC DIAGNOSTIC SIGN IN NEOPLASTIC STENOSIS OF THE COLON.—C. Minerbe and D. De Giacomi, in a case of lymphosarcoma of the colon and retroperitoneal glands, demonstrated that the colon was obstructed by inflating the intestine with a bicycle pump attached to an intestinal tube. The strong impulse which was imparted to the air in the colon by the stroke of the piston caused expansive pulsation in the tumor, which could be felt by the hand placed on the abdomen. He considers this a pathognomic sign of obstruction of the descending colon. After a series of experiments on the cadaver and the living body, he states that the following conditions must be present to give a successful test by this method: they are an intact sphincter ani, and the presence of stenosis of a certain degree due to degeneration of the intestine. The walls of the colon must be indurated by infiltration, and not the entire circumference of the intestine have been invaded, so as to render it inextensible. Unfavorable conditions occur with thick abdominal walls, deep situation of the colon, fullness with feces, and contraction of the abdominal walls. The same method applied to the stomach with an esophageal tube causes the stomach to stand out, so that its boundaries may be seen through the abdominal walls.—*La Riforma Medica.*

POSTURE IN THE RECOGNITION OF TRICUSPID DISEASE.—The diagnosis of involvement of the tricuspid valve is often far from simple, especially in cases of mild disease or relative incompetency, in which the murmur appears only under certain stress. In such cases change of posture or exercise may bring out a murmur previously unheard, and such procedures are carried out by every careful diagnostician who suspects a lesion of this valve. In the *Archives of Diagnosis* for January, 1910, Heinrich Stern describes a posture which he says has not previously been described, and of great aid in diagnosing the condition. To quote Stern's own words, he has "found that it is often possible to induce the murmurs which are characteristic of tricuspid disease when they have been absent, and to accentuate them so that they are better audible and distinguishable in case they be present, but are vague and indis-

tinct. We generally examine the heart while the individual is in the erect or recumbent position, and the more painstaking of us examine our patients by utilizing both postures. When a patient is on his back and there is any tendency to distension of the jugular veins, it will be evinced there and then. By lowering the head of the patient, while he is still on his back, the jugular veins become more distended, as a rule, and may begin to pulsate. Distension of the vein, or its pulsation, will increase in direct ratio to the lowering of the head, but when a certain point is reached, which is dependent upon individual factors, the pulsation diminishes more or less and the engorgement may also recede. This lowering of the head, which in reality is but an extension, a stretching of the muscles of the neck, the vei , etc., is reflected in the tricuspid area, where now murmurs are noticed that were not perceptible before, or which had been quite indistinct." As the posture produces an increase of the tricuspid incompetency, and may induce dyspnea, cyanosis, and pulsation of the liver, it is important that it be maintained only so long as it is absolutely necessary. For this reason the examiner "must be ready to proceed with the examination, stethoscope attached to the ears, and at the very moment the patient has assumed the posture. He should stand behind the patient, somewhat to the right of the head of the latter when an examining table is utilized. In case the examination is made in bed, the physician should be sitting at the right side of the head of the patient, who has been placed across the bed. In both cases the head of the patient should be supported by either the left hand of the examiner, or, in advanced cases, by both hands of an attendant. It should not be dropped at once over the edge of the examining table, or bed, but should be brought down very gradually and be immediately elevated as soon as the dyspnea and the venous engorgement become excessive."—*Medical Record.*

CHINESE MEDICINE.—A correspondent has forwarded us the following description of Chinese medical treatment which was given originally by a Roman Catholic priest, Père Ripa, of what he underwent to prevent the ill-effects of a fall. Having been thrown from his horse and left fainting in the street, he was carried into a house where a doctor soon visited him. "He made me sit up in bed, placing near me a large basin filled with water, in which he put a thick piece of ice to reduce it to the freezing-point. Then stripping me to the waist, he made me stretch my neck over the basin, while he continued to pour the water on my

neck with a cup. The pain caused 'by those nerves which take their rise from the pia mater' was so great and so insufferable that it seemed to me unequalled, but he said it would staunch the blood and restore me to my senses, which was actually the case, for in a short time my sight became clear and my mind resumed its powers. He next bound my head with a band drawn tight by two men, who held the ends, while he struck the intermediate parts vigorously with a piece of wood, which shook my head violently, and gave me dreadful pain. This, he said, was to set the brain, which he supposed had been displaced, and it is true that after the second operation my head felt more free. A third operation was now performed, during which he made, me, still stripped to the waist, walk in the open air supported by two persons, and while thus walking he unexpectedly threw a basin of freezing cold water over my breast. As this caused me to draw my breath with great vehemence, and as my chest had been injured by the fall, it may easily be imagined what were my sufferings under this affliction; but I was consoled by the information that if any rib had been dislocated this sudden and hard breathing would restore it to its natural position. The next proceeding was not less painful and extravagant. The operator made me sit on the ground, and, assisted by two men, held a cloth upon my mouth and nose till I was almost suffocated. 'This,' said the Chinese Esculapius, 'by causing a violent heaving of the chest, will force back any rib that may have been dislocated.' The wound in my head, not being deep, he healed it by stuffing with burnt cotton. He then ordered that I should continue to walk much, supported by two persons; that I should not sit long, nor be allowed to sleep till 10 o'clock at night, at which time I should eat a little thin rice soup. He assured me that these walks in the open air while fasting would prevent the blood from settling upon the chest where it might corrupt. These remedies, though barbarous and excruciating, cured me so completely that in seven days I was able to resume my journey."—*The Lancet.*

---

these tablets of value in the neuralgias and nervous headaches resulting from overwork and prolonged mental strain, paroxysmal attacks of sciatica, brow-ague, painful menstruation, la grippe and allied conditions. Indeed the practitioner who has such cases as the latter come under his observation, and who attempts their relief by opiates and stronger drugs, when such an efficient and harmless an agent can be used, commits a grave error.

Experience goes to prove that two antikamnia tablets in an ounce of sherry wine, taken every two to four hours, will carry the patient through these painful periods with great satisfaction.—*Medical Reprints,* London, Eng.

DIATHETIC ANEMIA.—Although it is considered an axiomatic principle that successful therapy depends upon the abolition or removal of the causative factor of any diseased condition, it is often the part of clinical wisdom to adopt direct restorative and hematinic treatment while the underlying operative cause is being sought for and remedied. It is of course well understood that the general anemia and devitalization dependent upon and caused by any of the constitutional diatheses or dyscrasia cannot be successfully combated by hematics and tonics alone. In Specific, Rheumatic, Tuberculous, Malignant or Paludal infections, the primal cause must be attacked with all the weapons of modern medical warfare that are likely to be of service, either antidotal or nutritional. At the same time it is quite certain that a perfectly bland, non-irritant and readily tolerable hemic restorative, such as Pepto-Mangan (Gude), is needed. This palatable preparation of iron and manganese, in the form of organic peptonates, can almost always be given with distinct advantage to appetite, digestion, nutrition and general "well-being," while causative therapy is under way.