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THE

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A Monthly Record of Medical and Surgical Science.

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Original Communications.

THE NATURE AND TREATMENT OF THE MORPHIA HABIT.

By EDWARD C. MANN, M.D. New York.

Physician to Sunnyside. A private hospital for Diseases of the Nervous System, the Opium Habit and Inebriety.

Although the opium habit is not known to the people as alcoholic excess is, yet thousands have become infected with this ruinous propensity, which, unless it is pursued to excess or becomes complicated with grave diseases rarely attracts attention, its concealment being generally so successful as to defeat inquiry. The individual who takes opium or morphine, generally begins with small doses and keeps the habit a profound secret from the other members of the family, and it is not until the irresistible craving has been thoroughly established that the patient's sense of shame at the fatal habit to which he is a slave disappears and he becomes lost to self-respect and self control. He is now unable to live without his opium or morphine. His constitution demands it and he is only capable of discharging his duties and occupations by the artificial and temporary health imparted by his customary dose. He has, by taking daily hypodermics, created a new physiological want, a systemic demand, which has become peremptory and irresistible. Each dose restores for the time, the strength and activity enfeebled by previous indulgence, but this effect soon fades away. The fearful craving again appears, the patient soon weakly yields and takes a hypoder-

mic. His dull unimpressive, sunken, lusterless eye becomes for a time clear, sparkling and restless; the pale haggard features become flushed as in youth and the muscular system is restrung, so that the tremulous hand becomes steady and the tottering gait firm and assured. These contrasts are diagnostic of the opium habit, together with a peculiar expression of countenance, although the patient will generally deny that he ever takes opium. The amount that patients take daily, differs very much. Patients generally write me that they are taking from three to twelve grains daily. I have known of a very few cases who took one drachm of morphia by the mouth daily, but these are rare. Coleridge took upon one occasion one quart of laudanum in twenty-four hours while De Quincey took at the highest about 480 grains of opium daily. My experience with patients suffering from the habit has been that most of them assert that pain in some part of the body first led them to take opium and was the origin of their habit, and that subsequently, the suffering, the sinking, the wretchedness and misery which attended abstinence from it induced them to continue indulgence in the drug.

The psychical effect of opium is very interesting. A professional gentleman under my care a few years ago, acknowledged to me that he voluntarily sought opium to impart calmness and indifference in the midst of domestic unhappiness and perfectly succeeded but he acquired the fearful, irresistible craving for morphia which it was very difficult to eradicate. He soothed his heartache, but he nearly ruined his brain.

While the majority of my patients have been insidiously led into the morphia habit by taking it primarily for the relief of pain and have almost unknown to themselves become victims of the drug, I have known of more than one patient who, I am satisfied, took opium primarily to mitigate mental suffering, others take it to get up an increased vivacity or brilliancy, while some literary persons, as was the case with De Quincey, imagine that they get a restorative and creative power from its use. The habitual use of opium seems to produce a peculiar type of psycho-sensory insanity, leaving the intellectual centres of the brain comparatively untouched. The patients' views of right and wrong are perverted, and while he or she may go on with routine duties, either in public or private life,

such a patient often manifests an utter disregard of truthfulness, honesty and sincerity and after a time shows a seeming inability to exert the will in any other direction or for any other purpose than the gratification of his morbid appetite. While writing my book on the "Medical Jurisprudence of Insanity," recently published, I had a very interesting correspondence with the late Sir James Fitzjames Stephen, a judge of the High Court of Justice, Queen's Bench Division. If we are to hold with him that "sanity exists when the brain and nervous system are in such a condition that the mental functions of feeling and knowing, emotion and willing, can be performed in their regular and usual manner," then it is very problematical whether any case of alcohol or opium habit is strictly sane, for both these poisons, opium and alcohol, induce a state in which one or more of the above named mental functions is performed in an abnormal manner or not performed at all. Their due importance is not attached by lawyers to the more delicate obscure forms of disease of the brain produced by the use of alcohol and opium, and one reason is that medical science has but recently brought them to light and medical men to-day are by no means unanimous as to their nature and effects. Cases of dipsomania and cases of morphia addiction of long standing do not take the drugs they indulge in voluntarily, but on account of an irresistible craving which is a disease. They are sick men and women and it is very problematical how far they are responsible for any overt act they may commit.

It is a very delicate question in medical jurisprudence as to how far and in what cases does the fact that a person is a dipsomaniac or a morphinomaniac relieve him by the law of England or the United States, from responsibility for what would otherwise be a crime? How far is that law reasonable, in the lights of medical science to-day? From a long experience with cases of Inebriety and the Morphine Habit I think that in cases of dipsomania and morphinomania that the nerves carry to the brain a variety of abnormal and delusive impressions of external objects and occurrences, that these abnormal impressions excite emotions which affect many parts of the body in various ways and which in particular affect the brain; that the brain in some manner deals with the impress-

ions, whether of perception or of emotion which it receives, during which process the patient is only partially conscious, if conscious at all, of what we describe as emotion, motive, deliberation and choice, and that it is very doubtful if the resulting groups of bodily motions which we call voluntary action are voluntary properly, at all. Are they not rather automatic and the product of disease? I do not believe that the brain, an organ of such extreme delicacy and intricacy, can be poisoned by alcohol or opium and then perform the mental functions in the usual and healthy manner. Jurisprudence must make allowance for the profound emotional perversion of the mental faculty produced by stimulants and narcotics and always present to a greater or less degree in dipsomania and morphinomania. The feelings, affections, propensities, temper, habits and conduct are affected in these cases.

Dipsomania and morphinomania principally affect the knowledge by which our actions are guided; the feelings by which our actions are prompted and the will by which our actions are performed; and all this must be considered in reference to the responsibility of persons shown to have done acts which but for such effects would amount to crimes. I think the law needs to be amended so far as to incorporate the above proposition, which is strictly in accord with our present medical knowledge. It is strictly in accord with psychological medicine and mental pathology. The use of opium tends to sterility and impotence and to the extinction of the reproductive propensities. Hearing and vision are not unfrequently affected and insomnia is very common. Tremors and an unsteady ill-balanced gait are generally observable in all well developed cases. The effect of opium is invariably, although in different degrees, agreeable, soothing, stimulating and elevating; culminating as opium smokers describe in perfect bliss and complete oblivion. This stage is soon succeeded however by languor, lassitude, loathing of food, aching of the limbs, gloom and indefinable wretchedness, and these sensations are only relieved by increased indulgence, which gradually results in a complete degradation and progressive cachexia, which if not checked by the cure of the morphine habit, kills the patient. The same course of destruction of mental and physical health rewards alike the rich and

the beggar. From the time when the indescribably entrancing repose following the use of opium occurs, may generally be dated the bondage to the drug, which eventuates in ruined mind, prostrated health and blasted hopes. The majority of morphine habituates take the drug, not because they want it, but to relieve the terrible sensations which attack them when they are without it, and they are thus forced deeper and deeper into a habit which they honestly detest, because they can see no way out of the dilemma into which they have plunged themselves by their habitual use of morphine to relieve nervousness.

There is probably no more terrible suffering than the complete exhaustion, the prostration of mind and body which these patients suffer. Such patients have a full consciousness of their position but are powerless to emancipate themselves from the opium habit. Their miseries and anguish are extreme, but in spite of all effort they find themselves forced back again into the habits.

These cases can be permanently cured by medical aid and systematic treatment. There are no patients with any disease who more require to be lifted up out from the depths of their suffering and are in greater necessity of careful nursing, consideration and attention.

Treatment.—The opium or morphine habit is a curable disease, and I only desire to know that an opium sufferer honestly desires a cure to assure him that this result can be accomplished. I know of no disease that yields a better percentage of cures to the proper treatment. Primarily, the patient must put himself under the necessary control and must, as I have said desire a cure himself.

The nervous system of most persons is too delicate to bear the shock of a total deprivation of the morphine at once. Grave nervous disorders follow such a course. In my own plan of treatment I employ a reductionary course of treatment keeping the patient's nervous system quiet with a combination of the bromides, gradually increasing the bromides as I decrease the morphia until on the tenth day after admission my patient is taking no morphia and has avoided all suffering and nervous prostration. For a tonic during this first period of treatment I use the Elixir of Gentian with the Tr Ferri Chlor. I generally combine the bromides of Ammonium and

Sodium and eliminate them from the system after I stop the morphine by warm baths, Sweet Spirits of Nitre and Digitalis. The reflex action of the spinal cord which has purposely been kept depressed by the bromides during the reductionary treatment is now excited by strychnia and the central nervous system is stimulated and invigorated by the daily use of the induced or Faradic current of electricity as general faradization. To obviate any psycho-somatic suffering after withdrawal, I use Nitro-Glycerine $\frac{1}{100}$ gr., by the mouth while at the same time I give a hypodermic injection of $\frac{1}{4}$ to $\frac{1}{2}$ gr., of Sulphate of Sparteine. I use this for perhaps two or three days after complete withdrawal. Nerve tonics are also employed and I have a preparation of my own which I call the Glycero-Phosphates, which consists of the Phosphates of Soda, Lime and Potash in a Glycerine-Phosphoric Menstrum that I feed the patient liberally as a brain and nerve tissue food. I prefer this to any preparation of the phosphates that is made for sale and I get better results from it. My emaciated patient generally gains in weight and strength daily until he has gained in a month's time from 25 to 30 pounds of flesh. His shattered constitution is built up and in about six weeks he is generally well enough to be discharged and to resume his place in society free from all craving for morphia. Exceptional cases require a longer course of treatment. In all cases where I can prevail upon the patient to do so, a sea voyage is taken to give a hardiness and vigour to the nervous system which hardly anything else does so well, after the course of treatment is finished. I am very careful about the diet of my patients and keep them on a proteid diet which requires the least expenditure of vital force and oxygen by the system to digest, appropriate and assimilate it; only a minimum of starchy food and vegetables are allowed on the diet list. 801 *Madison Ave.*

APPENDICITIS.

By Ed. Evans, M.D., Lacrosse, Wis.

At a time when this subject is being so generally discussed in societies and through the journals, the following cases may prove of interest and perhaps help forward what I believe to be the only rational treatment of the disease, viz., operation as early as the diagnosis can possibly be made.

In a recent paper (*New York Medical Journal*, June 30) Wyeth says: "In my entire experience I have yet to see a death which could not properly be ascribed to delay in timely and skilful surgical interference."

Case I. M. F., æt 25, strong, robust man; third attack. May 5th, 1894, asked by Dr. Gundersen to see the case with him with a view to operation. He first saw the case this a.m., another doctor having had the case in charge previously. Attack of only one day's duration. Immediate operation decided upon. Patient in great pain, localised in right side, where there is marked tenderness, very slight fullness, indistinct dullness, great rigidity, obstipation, vomiting, no tympanites, fast pulse, no fever.

Operation.—Lateral incision. Omentum adherent, very œdematous. Some opaque, milky fluid and flakes of lymph escaped. Bowels firmly matted about cæcum. Small abscess found between end of cæcum and parietes, in depth of which appendix could be felt, firmly adherent. Abscess cleaned out and drained. There was general peritonitis and patient died June 8th.

An acute exacerbation of pain the previous evening, accompanied by much vomiting and prostration, probably marked the fatal extension of the disease, before which operation might have saved the patient.

Case II. L. D., æt 15, delicate boy with rheumatic endocarditis. First attack May 6th, during morning taken with

severe pain in abdomen and vomiting. I was called during the evening. Found him in severe pain, general over abdomen, but most intense in epigastrium and right side. No tympanites or rigidity, no distinctive tenderness. Pulse and temperature normal. May 7th, pulse 100; temperature 100½°. Pain and tenderness localized over McBurney's point, where there is a very little dullness, but no tumour, no tympanites. Under morphine, vomiting had ceased, pain was lessened and he had slept well, and he appeared well enough to encourage the Fabian policy of waiting.

Operated in St. Francis Hospital, 32 hours after onset. Pulse 100; temperature 102°. Lateral incision. About two drams of slightly turbid fluid escaped on incising peritoneum. Intestines slightly congested and a few slight adhesions joined some coils of ilium to cæcum. The appendix was found doubled up behind and external to cæcum. It was distended and tense (2 c.m. in diameter) and adherent everywhere. It was removed, stump cauterized, and iodoform gauze drain used. Recovery uneventful. Temperature never rose to 99°, and he left hospital in 2 weeks.

Appendix contained about one and one-half drams of dark, foul, grumous material. The mucosa was black and ulcerated, and at one point near the base the whole thickness of wall was dark and softened, and would undoubtedly soon have perforated.

Case III. C. A., æt 14, cousin of Case II., Oct 2, 1892. First attack began with pain, vomiting, localized tenderness and fever.

Oct. 3rd. About same.

Oct. 4th. Seemed much better.

Oct. 6th. Much worse. Great pain and tenderness everywhere over abdomen, tympanites, vomiting, very fast pulse, temperature 102°.

Operation.—Found a large stinking collection of pus, general suppurative peritonitis and a perforation of base of appendix, from which fæcal matter oozed. Removed appendix, cleaned out abdominal cavity and drained. Death three days later.

This was just such a case as the conservative surgeon would consider an ideal one for temporarizing. It was not severe at onset; apparently much better on third day, yet next day it proved beyond hope of successful interference.

It is interesting to compare the last two cases. The pathological condition in each case was exactly similar; but in the one timely interference saved his life.

Case IV. J. McG., æt 42, came to office Jan. 31st, desiring to know cause of a small and painful lump in right side. Found a small tumour in site of appendix and advised its removal. Gives a history of occasional severe attacks of pain, centring at above point for about 4 years, also irregular bowels, either constipation or diarrhœa, and very often soreness and tenderness.

Operated Feb. 2nd.—Tumour, consisting of appendix, firmly adherent between cæcum and last two inches of ileum presented beneath incision, adhesions separated with difficulty. Appendix removed and stump buried in end of cæcum. Small drainage tube used. Rapid recovery and at work again in four weeks. Appendix distended with dark grumous contents and mucosa black and ulcerated at numerous points. Proximal end strictured but not quite occluded.

Case V. H. B., æt 32. Operated March 13 by Dr. Christensen. Found a small abscess between cæcum, base of appendix and ileum entirely enclosed by adhesions. This was cleansed out and appendix removed and drainage employed. Discharged cured April 27th. Appendix had ruptured at base. He had had repeated attacks, and a few weeks previous to operation had been examined by Drs. Christensen and Gundersen and myself, and a small tumour felt, which we agreed was the thickened appendix; but for some reason operation was not done. Shortly afterwards he was taken seriously ill, with what the attending doctor told him was peritonitis, and that he narrowly escaped death, was quite evident at operation.

Case VI. H. W., æt 28th. Operated April 19th, by Dr. Gundersen. Patient was seen by a doctor in the country a few weeks previous, suffering from a mild attack (first) of appendicitis. He advised him to come to hospital and have it

removed as soon as he was able. The patient readily consented, as one of his neighbours had succumbed to the same disease some time before.

Operation was very easy. Appendix was free from adhesions. Recovery rapid.

Appendix on examination presented all the appearances described and figured in a paper on Appendicular Colic, by T. R. Jessop, in *British Med. Jour.*, March 24, 1894, having an expanded distal end and strictured near cæcum.

Case VII. W. C,, æt 11. Operated April 9th, at St. Francis Hospital. Patient just recovered from a severe attack, which lasted for two weeks and almost proved fatal. There were all the characteristic symptoms of appendicitis, pain, tenderness and vomiting, local induration, constipation and high fever. Parents hesitated to have operation, till slight recurrence convinced them of danger and they removed him from the country to hospital.

At the operation found induration and adhesions to parietes, and much matting together of parts. Found no abscess and failed to find appendix. I drained freely and for some time. Boy has been well since, has no pains and bowels regular and health perfect. In this case had operation been done at onset a dangerous illness would have been averted. The operation probably would have been easily completed and the uncertainty of present imperfect operation avoided.

Case VIII. E. J. K., æt 38. Operated June 15th, 1894 ; went home July 4th. Has had repeated attacks. One two years ago, and one previous to that very severe. For the past two years has had to exercise great care of bowels to prevent relapses and was hardly ever free from pain and tenderness.

Appendix easily reached. It was quite slender and 3 inches long. It was free from evidence of inflammation about it, except a few very slight adhesions on under surface. After removal stump was buried by three sutures. Appendix—Lumen obliterated for about 2.5 c.m. at distal end, its place being marked by a slightly pigmented cicatricial cord ; 1.5 c.m. of proximal end in same condition. Lumen, in central part not dis-

tended. Mucosa, normal in appearance, and a few drops of thin straw colored fluid present. This was a good example of appendicitis obliterans, and I think in time would have undoubtedly ceased to give any further trouble. But until operation, we could not judge of condition except by symptoms; and these were such as to be a cause of pain and anxiety to the patient, as well as a bar to life insurance in an otherwise perfectly healthy man.

These cases demonstrate as fully as a few cases can (and they are fairly representative of nearly all cases of appendicitis) when we should operate and why we should operate.

When to operate.—Just as soon as a diagnosis of appendicitis can possibly be made with certainty.

Dr. J. B. Murphy (see paper read before Pan-American Medical Congress), says: Operate when we have present these cardinal symptoms:

1. Sudden attack of pain over appendix.
2. Local tenderness in position of appendix.
3. Always nausea and sometimes vomiting.
4. Elevation of temperature.

Wyeth says it would be better for exploratory laparotomy to be done in every instance within the first twenty-four hours of the disease—provided a good clean surgeon is procurable.

Why operate?—Because thereby many lives are saved that would otherwise be lost. It is estimated by the best authorities that from 27 per cent. to 30 per cent. of cases treated expectantly die sooner or later of this disease. It is as yet impossible to give the mortality in operated cases, except for individual operators. Mortality in Dr. Murphy's 141 cases was 11 per cent. Some operators report a lower death rate, others much higher. Statistics in operated cases are as yet of little value, as in so many cases, operation is resorted to only when the trust-in-Providence treatment has already placed the case beyond hope. They, however, prove that even now the operative treatment is much the more successful. And granting the advisability of operating early and given a competent operator, the mortality should be as low, as, or lower, than for any other

class of cases in which the abdomen is opened for well-defined surgical ends.

Why operate early ?—Matterstock says that more than 50 per cent. of the cases that die without operation of appendicitis, die before the sixth day. Therefore to wait till the sixth day is to lose the possibility of saving 50 per cent. of the cases that require an operation to prevent death by attack.

The earlier we operate, the less inflammation we will find, hence fewer adhesions and other complications. It is easier to locate and remove the appendix ; and we will usually forestall perforation, abscess and peritoneal infection.

Granting the patient will recover, subsequent operation will often be required to prevent relapse, and by early operation we have one convalescence, instead of two, and the patient, his friends and ourselves are saved much anxiety and annoyance.

The timid or " conservative" surgeon may point to cases where recovery has taken place without operation (as do most cases) and there has been no recurrence, or only mild recurrence. How do we know who will be so lucky, or who will have the fatal relapse. In this regard compare cases I., V. and VIII. Case VIII. suffered more in the intervals of relapses and had more relapses than either of the others, yet his was the only one of the three in which operation was not absolutely required. And Dr. Senn, in a paper on Appendicitis Obliterans, concludes that in view of the slowness, danger and uncertainty of the natural process of obliteration of the lumen of the appendix and consequent cure of the disease, we should not depend on it, but in those relapsing cases resort to operation.

In operating, I would like to call attention to the point emphasised by Dr. Shepherd. On opening the abdomen look for anterior, longitudinal band on cæcum, following down which the appendix is found with precision and certainty.

CARCINOMA OF THE LIVER.

By H. W. Blunt, M.D., Granby, Que.

Although carcinoma of the liver is a disease of somewhat frequent occurrence, still the age of my patient, together with other associated peculiarities, goes to make up a case worthy of some little thought and consideration.

Upon May 21st, 1894, I was called for the first time to see Mrs. W., a large fleshy woman, eighty-five years of age. I found the patient lying in bed, and to all appearances quite comfortable and free from pain. Her complaints at this time were anorexia and general weakness.

I was able to obtain the following brief history of the case :— Patient had always enjoyed remarkably good health (with the exception, as she said, of "having wind on her stomach") until about seven months previous to the above date. At this time she began to lose in flesh and strength, and occasionally had slight pains in the right hypochondriac region, but had never mentioned this fact to anyone. Her relatives, who saw her from time to time, noticed that her skin was of a muddy, slightly icteroid hue. Patient's appetite was particularly good, and so continued until about ten days previous to my first visit, when from exhaustion and general weakness she was forced to go to bed. There was no history of alcoholism, syphilis or biliary colic obtainable.

On examination, skin and conjunctivæ intensely jaundiced ; muscles of extremities soft and flabby, with little subcutaneous fat present ; tongue moist and covered with a thin white fur ; pulse 91, temperature 100⅘°F. There was slight tenderness in the right hypochondriac region. The hepatic dulness began at the fifth rib and extended below the costal margin for about 3 inches in the mammary and axillary lines. There was no appreciable enlargement in the median line. The extent of the enlargement could not be estimated by palpation. No pain or tenderness present in epigastric region and no ascites or œdema of the extremities.

Urine scanty, very dark in colour and containing abundance of bile. Stools white and slimy. From this date (May 21st) patient had almost complete anorexia, but was intensely thirsty. She rapidly became weak and exhausted, and pain in the hepatic region soon became a very prominent feature of the disease. The pain was lessened when patient would lie quietly in bed on her right side. The liver gradually enlarged, and its border could be clearly outlined one or two days before death. Pulse ranged from 90–100, and temperature from 99⅘°–101⅘°F. The condition of total obstruction still persisted and patient died on June 5th, just fifteen days after my first visit, and about twenty-five days after she first took her bed.

An autopsy was performed on the following day, 16 hours after death. The abdomen was opened by an incision in the median line through a thick layer of fat. The liver was found moderately enlarged and adherent to the abdominal wall and ribs, but the diaphragm was free. The capsule of the liver was thickened, and there were present numerous round masses, varying from the size of a pea to that of an unshelled almond. These bodies were of a greyish white color, very hard, some projecting from the surface of the liver, while others were imbedded in its substance. The intervening liver tissue was of a deep red colour and of moderate consistency. No gall stones were found.

The stomach was greatly distended, and at the pylorus a hard uniform mass of cartilaginous consistency could be felt and extending into the duodenum for about three inches. The duodenum at this part was adherent to the liver, and bound down to the spinal column and ribs by very strong fibrous bands.

The mesenteric glands were enlarged and hardened.

I must apologize for the incompleteness of this report, due to the fact that I was not permitted to make a thorough and complete ante-mortem or post-mortem examination, and also to the limited data obtainable. I consider the case of interest as demonstrating the occurrence of carcinoma of the liver at very advanced life, together with cancer at the pylorus and duodenum with symptoms latent and ill-defined.

CERVICAL PREGNANCY.*

By R. C. KIRKPATRICK, M.D.,

Demonstrator of Surgery, McGill University, Surgeon to Montreal General Hospital.

By the term cervical pregnancy is meant that condition in which the ovum, instead of remaining in the fundus of the uterus and becoming there implanted, passes into the cervix and develops there. Such a condition naturally results in the premature discharge of the products of conception, and this actually occurs at a period not later than the third month. It is a condition that so rarely occurs, or at least is so rarely recognized, that I venture to report the following case which occurred in my own practice.

Mrs. W. was confined for the first time in July, 1891. The labour was normal in all respects and the recovery good. She is a large, strong woman, well nourished, but not fat. General health good and no history of any previous illness of importance. On March 23rd, 1893, while out shopping, she was taken with violent pain in the lower part of the abdomen, necessitating her return home at once. Shortly after arriving there, hæmorrhage came on and several clots were expelled. When seen she was anæmic and very anxious. She gave a history of having missed two monthly periods and being near the time when the third might be expected.

On vaginal examination, the cervix of the uterus was found much enlarged and elongated, reaching nearly to the orifice of the vagina. The external os readily admitted the forefinger, which immediately encountered what felt like the remains of a placenta, and on removal proved to be so, at least as far as could be determined by examination. Passing further in, a second opening could be felt, but not large enough to admit the finger easily. When the contents of the uterus were removed the cervix contracted to nearly its normal size. The fundus of the uterus could be felt by bimanual examination not to be enlarged to any extent.

* Read before the Montreal Clinical Society, June 9th, 1894.

The clots, which the patient said were expelled at first, had been thrown away, and no remains of a fœtus could be found in the pieces removed by me, hence some doubt may be raised as to whether it was a case of pregnancy at all. The history of the suppression of the menses for two months, the appearance of the mass removed, and the fact that the mass removed had no pedicle, such as one would find in polypus, all point strongly to pregnancy.

Again, the enlargement of the cervical zone of the uterus, and this enlargement subsiding so much on the removal of the contents, coupled with the fact that a second opening, presumably the internal os, could be felt, show that the case was one of cervical pregnancy.

This condition is, in most of the text books, dismissed with a very short notice. Barnes classes it as a form of sub-ectopic gestation, and describes it as the condition "When the ovum is developed in the canal of the cervix uteri. Chavanne narrates a case. It is extremely rare."

Lusk applies the term to a condition in which the placenta remains attached to the fundus, and the ovum is forced down into the cervix by means of uterine action on account of insufficient development of the mucous membrane, the ovum being nourished from the placenta by means of a long pedicle, and being prevented from escaping by a contracted os externum. He does not mention the condition where the ovum develops primarily in the cervix.

Playfair describes the condition, where the pedicle remains attached to the fundus, as one of temporarily arrested abortion. He quotes Thévanet as saying that primary cervical pregnancy may occur, though very rarely.

Montgomery mentions a similar case in the *American Journal of Obstetrics*, 1885, and that is the only report that I can find.

Retrospect Department.

QUARTERLY RETROSPECT OF GYNÆCOLOGY.

PREPARED BY T. JOHNSON-ALLOWAY, M.D.,
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The Limitations of Abdominal Surgery.—The *Annals of Gynæcology* says:—"In a valued communication published in the *Annals*, Dr. Buckmaster calls attention to the tendency which exists at present towards claiming results for abdominal surgery which are rarely obtainable, and which do not fairly represent the present state of the art. He enforces his remarks with the publication of a fatal case in his own practice, thereby setting a laudable example which we sincerely hope will be generally followed. We have no doubt that our *confrère* is entirely right in feeling that it is of the utmost importance for the profession and for the public that a just idea of the limitations, as well as the glories, of abdominal surgery should be inculcated. Unfortunately, at present, the tendency is in the opposite direction. As long as human nature remains as it is there will be a strong temptation to publish brilliant and successful cases, while saying nothing about others which have ended fatally. Wonderful and almost incredible series or "runs" of successful cases are paraded in the journals, and sent out in thousands of reprints to the wondering and possibly incredulous profession; but there is apt to be a depressing silence as to the results of the operation before and after the "run." Now, the natural consequence of this is that a large number of surgeons get the idea that abdominal operations are easy and not very dangerous, and they try to perform them without sufficient training or knowledge of the subject, so that the patient promptly dies, but the case is not reported.

It is, therefore, well to consider some of the conditions and accidents which may occur in spite of the most dexterous, careful, and conscientious surgery, and must always lead to a certain amount of mortality. First comes the finding of

malignant disease of the abdominal organs, or growths, which in our experience is not rare, and cannot always be diagnosticated with sufficient accuracy to contraindicate operation. Next comes a chronic pyæmic condition, where pelvic suppuration is not confined to the uterine appendages, or to the neighbourhood of the appendix, but has burrowed about and formed pockets and sinuses, with or without the presence of tuberculosis. Then allowance must be made for the presence of fatty or amyloid degeneration of important organs, for the weakness caused by hæmorrhages, pain, want of nutrition, old age, etc., for the presence of acute peritonitis, or of irremediable disease, or trauma of the intestine, or of dense and intractable adhesions, and, finally, for the natural proneness of some individuals to sepsis, hæmorrhage, or paralysis of the intestines after operation.

All of these are conditions which no one can avoid who does his duty in operating on all cases which seem to offer any reasonable chance of cure, and the standing wonder of the profession is as to how a very few men seem to be much more fortunate than all others in meeting such serious complications so seldom.

Taking all these facts into consideration, we are inclined to agree with Dr. Buckmaster, in his statement, that an average of 10 per cent. of mortality in abdominal operations of all classes as met with in a mixed hospital and private practice is a fair and moderate one, which does credit to any surgeon. *Some few men by special skill may reduce the percentage* of mortality considerably, particularly when *their practice lies in certain lines of gynæsic surgery*, giving a large proportion of comparatively safe operations, especially when much experience has improved the natural ability of the operator.

We have no doubt however, that, taken as a whole, the percentage of deaths in abdominal operations in this country today *is vastly higher than* 10 *per cent.*, and it would be something dreadful to contemplate were it not that a large number of operators, conscious of their limitations and tender of their "records," decline to operate on a great many cases which really require surgical relief, and thus cause the unhappy patient, after long suffering, when in a wellnigh desperate

condition, to finally apply to *those surgeons who are willing and able to handle such cases.* This process of natural selection, improving the records of the many and injuring those of the few, averages the mortality of all such operations in the hands of different surgeons between 10 and 30 per cent. A few men after they have established a reputation, and have "cleaned up" the bad and neglected cases in their part of the country so that they get cases in good condition from the family physicians of their vicinity, are able *to reduce* the total mortality considerably below 10 *per cent.*; but certainly for medico-legal purposes the standard should not be set as high as 90 per cent. of recoveries, and many estimable gentlemen who are essaying abdominal surgery *with little preparation and less experience* will find that 50 per cent. of mortality will hardly cover the results of their PERNICIOUS activity."

An acknowledgment of the above nature had to come sooner or later so disastrous was the mortality known to be in the United Stetes in abdominal surgery. There are several factors as cause. The first and probably the most prominent, can be laid at the door of the so-called Post Graduate Schools. After a half educated man had been lured into the city to have some fresh gilding put on him, he goes straight to the instrument makers and fits himself out with what he had seen used, and what he was told could be easily used. Then begins the opening of all the unfortunate women in this man's vicinity and then also begins the high mortality. Then again there are only a fraction of pure specialists in the whole country. Every man does gynæsic work—he has had a post graduate course and knows all about it. Again the fatal private house operating adds largely to the mortality. The ease with which the degree in medicine is obtained and the great freedom of the citizen to pose on one of the very numerous Medical Society platforms with his record of many hundreds with *one* death, makes every man feel that he must go and do likewise, or be forever buried in oblivion.

Gonorrhea in Women.—Carry has made extensive researches among prostitutes suffering from vaginal discharges. In only one-third of the number was the gonococcus of Neisser detected. Carry insists that the gonococcus is absolutely specific of gonorrhea. It is very easy to recognize. In four out of five

cases its seat was found to be the urethra, in one in five the cervix. The peri-urethal follicles, Cowper's glands, the vagina, and anus are exceptional seats of the gonococcus. Gonorrheal urethritis in women is the almost exclusive cause of gonorrhea in man, and the absence of discharge, pain, and local tenderness all tend to hide the source of contagion.—(*Lyon Médical.*)

Hysterical Menorrhagia.—RIGAL says that there are many more cases of simple menorrhagia due to hysteria than is generally supposed. In these cases the patients are perfectly well during the interval. Examination during the attack reveals intense congestion of the uterus and ovaries, and in some cases the ovaries are easily palpated. The symptoms may be very severe—great pain, convulsions, and profuse hemorrhage. These patients recover very rapidly after an attack, and nothing remains of the congestive condition. Such cases occur mostly in young, highly emotional women.

Amenorrhœa and Corpulence.—LOMER described before the Hamburg Obstetrical Society a case of extreme obesity following amenorrhœa. The patient had become exhausted by prolonged lactation. She gained fifty pounds in a year, and was so fat she could scarcely walk. She suffered badly from vertigo, flushings and epistaxis The cervix was scarified; all the symptoms, especially the epistaxis, disappeared; and the patient diminished in weight. Kirch, it was pointed out, has already practised abstraction of blood in the treatment of excessive corpulence.

To Amateurs in Laparotomy.—Dr. F. BYRON ROBINSON offers the following practical selections to laparotomists:

1. Remember it is criminal to learn to do laparotomy on a patient.

2. Do not attempt to do laparotomies in private houses and with no nurses.

3. Before doing any laparotomy be sure to study under a master, and assist him, if possible, so that you can see the pathology in the abdomen and how he removes it. Ask him to allow you to tie a knot once in a while. Never lose the chance of assisting in or witnessing a laparotomy.

4. Learn the after treatment. Half the battle is with the intestines.

5. Study carefully the abdominal and pelvic viscera of the

cadaver. Study as many cadavers as you can. Never lose the chance of doing a *post-mortem* or attending one. Study the dog's viscera.

6. Be sure to make systematic experiments on dogs' abdominal viscera. Always do the autopsies on your dogs' yourself.—(*Medical Age.*)

The Vaginal Route as compared with the Abdominal for the Removal of Pelvic Viscera.—ENGELMANN (St. Louis) calls attention to the many advantages of the vaginal route, even in suppurative cases with multiple pus centres. In fact, in extreme cases, which often cannot be completed by laparotomy, he regards the vaginal route as preferable, if not imperative, and relegates laparotomy to simple non-adherent cases, admissible in suppurative forms only if unilateral or if distinct enucleable centres exist. While vaginal hysterectomy was done by Dubourg of New Orleans in 1846, it was forgotten until a few years ago, when it was revived by the labours of Péan, to whom we must accord the credit of placing vaginal hysterectomy for malignant disease among recognized surgical operations. By his forci-pressure methods he made possible the removal of large tumours by segmentation or morcellement, and it was found that the appendages were easily reached, and with them pus centres and inflammatory deposits, that intestinal injury and shock were avoided, that drainage was perfect and recovery rapid. While French surgeons have done much work in this direction, the operation as yet has not found much support in other countries. The best work has been done by Jacobs of Brussels, who has lost only 2 cases out of 125, most of them difficult and desperate. The leading operators who use vaginal extirpation by morcellement resort to it for malignant disease, fibroid growths, bilateral suppuration, salpingo-ovaritis, and general circumuterine and pelvic suppuration.

Dr. Jacobs prefers the vaginal method for certain cases in which the appendages on one side only are to be removed. Péan limits the hysterectomy by morcellement to benign growths, and to all cases of pelvic suppuration treated to-day by laparotomy, while Ségond still prefers laparotomy when operation is indicated in unilateral cases; above all, unilateral salpingo-ovaritis when non-suppurative.

The operation is that of vaginal hysterectomy, hemostasis being obtained by multiple forci-pressure; and the guiding principle is not to cut without having seen and without having previously clamped in advance of the proposed incision. By substituting forci-pressure for the ligature rapidity of operating is obtained. Diseased or greatly enlarged uteri and tumours are removed piece by piece with practically no loss of blood, for each piece before being removed is properly guarded by forceps and grasped with the strong vulsellum above the point of the knife until the whole mass is removed, be it even a fibroid reaching to the umbilicus. Inflammatory masses in the pelvis are treated in the same way. Such pus sacs as can be removed entire are so removed, while others are merely opened and drained. But strong emphasis is laid on the fact that it is perfectly safe to leave such parts as cannot be liberated or cut away, owing to the perfect drainage caused by the removal of what does yield.

The advantages of the vaginal route are: proximity of the parts to the eye and hand of operator; the rapidity of operation; the absence of hemorrhage by the application of forci-pressure before section; the avoidance of the peritoneal cavity proper to a more or less marked extent. To this is due the absence of shock that is claimed for these operations. There is perfect drainage by the forceps and the dressing. Recovery appears to be more rapid than after laparotomies. There is no external scar and no danger of hernia. The forceps are removed in forty-eight hours, the patient sits up on the fifth or sixth day, and cicatrization is complete on the tenth to fourteenth day. As the intestines are not likely to come into view, injuries to them are rare, but if such occur they can be remedied quite as easily as in the abdominal operation.

The expert can remove tumors extending as high as the umbilicus by this route; but for others it is the operation of choice for bilateral pyosalpinx where foci often remain in the endometrium or in the stumps of the tubes.

In concluding E. urges that a trial of this method be given, but warns his confrères that the operation should not be attempted without the long and short retractors that are necessary.—(*Annals of Gyn. and Ped.*, February, 1894.)

The Ligature of the Uterine Arteries in Myoma of the Uterus.

—Otto Kuestner (*Ctrlbl. fur Gyn.*, 1893, No. 33) was stimulated by Gottschalk's article to publish his observations sooner than he would have done otherwise. In his first case he intended doing a total extirpation *per vaginam* but after tying off the greater part of both broad ligaments the operation had to be given up, as it was found impracticable. The uterus contained a fibroid the size of a fist in its posterior wall, giving rise to profuse hæmorrhages. When the patient was examined, seven weeks after the operation, the uterus was found about the normal size. The hæmorrhages had ceased a few days after the operation.

In the second case the patient had been suffering from profuse hæmorrhages for over six years. Curettage on two different occasions had no effect upon the hæmorrhage. The uterine arteries were ligated February 12, 1893. The uterus at this time measured twelve centimetres. On March 15th, the uterus measured only six centimetres and a half and the hæmorrhages had ceased. In the third case the same good results were obtained by the operation. Kûstner makes a circular incision around the portio vaginalis and ligates the uterine arteries directly. He thinks the operation suitable not only for myoma but for those rebellious cases of metritis attended with profuse hæmorrhages.

Uterine Hæmorrhage in Scurvy.—A. Goldberg (*Centrlbl. fur Gyn.*, 1893, No. 50) gives the history of a case of profuse uterine hæmorrhage attended with petechiæ all over the body and which upon closer investigation showed that the woman was the subject of scurvy. The hæmorrhage was first looked upon as due to an abortion but a further examination of the woman and her antecedents resulted in a diagnosis of the aforesaid disease. The woman was cured by a treatment directed to her general condition.

Ligation of the Uterine Arteries in Myoma Uteri.—Dr. S. Gottschalk (*Ctrlbl. fur Gyn.*, 1893, No. 39) describes the technique he follows. He ligates the arteries in the same way as he would in vaginal hysterectomy. The vaginal mucous membrane is incised and three ligatures one over the other are applied so that the lower part of the broad ligament is embraced. Silk is used for the ligatures and the mucous mem-

brane is closed over them. In order to avoid injuring the bladder he has always separated it from the uterus though he admits this may be unnecessary. His experience thus far covers seven cases, the last two being operated upon only two months ago. In both of these cases the myoma was the size of a small fist and caused profuse hæmorrhages. These have ceased as well as the other symptoms that had been present. The other five cases had been operated upon within from four to fifteen months. In two a complete cure had taken place, as the growth as well as the symptoms had disappeared. In the other three cases a shrinking of the growth had occurred. In some cases he combines a curettage with the ligation and follows up the operation with a course of ergot. He considers with Küstner that the operation is indicated in concentric hypertrophy of the uterus and in obstinate metrorrhagia of the climacteric.

On the Action of Salicylic Acid on the Uterus.—C. Binz (*Berl. klin. Woch.*. 1893, No. 41) made a number of experiments on guinea-pigs to discover whether salicylic acid has any tendency to produce abortion, as has been asserted by some observers. In the eighteen experiments eight guinea-pigs aborted, but of these three received such large doses as to cause toxic symptoms, hence they must be excluded. In the other five there seems some doubt as to the abortion being due to the drug. Still the author deduces the following conclusions from his experiments and from the literature on the subject:

1. Salicylic acid is worthy of trial in painful, delayed or scanty menstruation.

2. It should be given with caution in pregnant women who have a tendeney to abort and in women with tendency to menorrhagia.

Indications, Technique and Results of Operations on the Annexa.—Schauta (Germ. Gyn. Congress, Breslau, May, 1893, *Ctrlbl. fur Gyn.*, 1893, No. 22) expresses himself as follows:

1. Out of 6,315 cured cases [*sic*] coming under his own observation, 1,130 (17.8 per cent.) had inflammatory affections of the annexa.

2. A permanent return to the normal condition is not to be

expected when the tube has reached the size of a finger by inflammatory process.

3. The diagnosis of the contents of the tube (whether it is sterile, contains gonococci, streptococci, or staphylococci) can not be determined before the operation either by the history or temperature curve.

4. Fever may occur when the contents are sterile, or there may be an afebrile course before the operation even when the contents are pathogenic.

5. An operation is indicated when the tube has the thickness of a finger and when severe symptoms are present, and under all conditions when the presence of pus has been substantiated.

6. The bacteriological examination of the contents of the tube during the operation is of importance regarding the technique.

7. The operation is done in the usual way with pelvic elevation, when the tube is of moderate size and no pus in seen during the operation.

8. In large tumours the contents are bacteriologically examined. If these contain gonococci only, the sac is opened washed out and then removed entire. If streptococci or staphylococci be preseut, the operation for the time being is end ed. In four or five days, when peritoneal adhesions have shut it off, the sac is opened and drained.

9. In very large tumours lying close to the vagina an opening is made through it, but generally the abdominal route is be preferred.

10. In pus sacs of moderate size (the size of an egg or orange) cœliotomy is done, exercising great care not to rupture the sac. Should this, however, occur, the escaped pus is at once bacteriologically examined. If this be sterile or contain gonococci, the operation is concluded in the usual way and the abdomen closed. But if it contain streptococci or straphylococci, Douglas's space, with which the pus came into contact, is drained.

11. The drainage of Douglas's space serves to remove the secretions and to close off in a short time the remainder of the peritoneal cavity.

12. The total mortality, from February, 1887, to April,

1893, in two hundred and sixteen operated cases was thirteen —*i. e.*, six per cen'. Of these thirteen two died of pneumonia.

13. The mortality of the cases in which the the tubal contents were not purulent or were sterile was 2.8 per cent., of those in which gonococci were present it was 9 per cent., and of those in which streptococci or staphylococci were present it was 20 per cent. Of the latter the mortality of the drained cases was 16.6 per cent. Of the not drained cases it was 40 per cent.

14. Regarding the permanent results of the operation, he had under observation one hundred and twenty-one cases. One hundred of these were free of all symptoms. In seventeen there was marked improvement and in four the former symptoms persisted.

Reviews and Notices of Books.

A Manual of Therapeutics. By A. A. Stevens, A.M., M.D., Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania; Demonstrator of Pathology in the Woman's Medical College, Philadelphia; Physician to St. Mary's Hospital and to the South Eastern Dispensary; Pathologist to St. Agnes's Hospital. Philadelphia: W. B. Saunders, 1894; pp. 435; price, $2.25.

This little work is prepared especially for the use of students as an outline of their work in this department, and a guide to their study of the larger text-books. The arrangement is in alphabetical order, and Latin titles are used throughout. It contains first a chapter on the physiological action of drugs, then the various drugs are described individually, with their actions and uses. A third part of the work is taken up by the consideration of such remedial agents as cold, counter-irritation, electricity, antiseptics and disinfection, etc. Next we have applied therapeutics, and finally a short chapter on incompatability. This last chapter is particularly good, as it deals with the principles governing the subject, rather than endeavouring to give a list of the drugs which should not be prescribed together. It is a useful book, and contains much information in a small compass.

Anatomischer Atlas der Geburtshilflichen Diagnostik and Therapie, mit 145 Abbildungen, Von Dr. Oscar Schaefer. Lehmann's Medicin Hand-Atlanten, Band ii, Geburstshilfe ii Theil. Munchen, J. F. Lehmann, 1894;

This is the second volume of an atlas which is intended to cover the whole ground of medicine and surgery and their special branches, the whole to be complete in seventeen volumes. The present volume is the second part of that portion of the work devoted to midwifery. It deals with the morphology of the female organs, physiology and pathology of pregnancy

and child birth. The diagrams and plates are carefully selected and executed, and the letter press concise and clear. To those who can read German, this atlas will be useful, the small size and reasonable price of the volumes being a special recommendation.

Report of the sanitary state of the City of Montreal for the year 1892. By LOUIS LABERGE, M.D., Medical Health Officer.

In this report the precautions taken during the period when an epidemic of cholera was threatening are related. At that time the sewerage system of the city was inspected, and the health board learned from the City Surveyor that the lateral sewers recently built had been constructed without regard to the general system; that numerous dead ends existed; that there were 7 or 8 miles of streets without sewers; that there were 28 miles of streets with sewers in bad condition; that deposits exist temporarily in many of the sewers, and that the temperature in the sewers is about 70° Fahrenheit.

Upon the recommendation of the Montreal Medico-Chirurgical Society, a sanitary engineer was added to the permanent staff of the department.

During the year, 195 privy pits were abolished after the localities had been cleared and disinfected, 697 water closets were put in houses, 4452 complaints concerning general nuisances and 1617 complaints against the scavengers were received and investigated. The sanitary police, ten in number, made during the year 58,201 visits. 9173 nuisances were detected, and 9045 nuisances were abated. That much still remains to be done in the way of abolishing privy pits may be seen by the fact that 183,655 cubic feet of night soil were removed during 1892. We are accustomed to grumble a good deal at our health department but the facts just quoted show that there is a great deal of work to be done.

Voluntary stamping of meat for butchers willing to allow it, was begun at 10 p.m., on November 9th, the order being countermanded the following day at 10 a.m. As the carcases of 515 animals were stamped during that brief period one wonders why the order was rescinded.

Of the vital statistics, which are given in full, we will only

mention here that the births recorded were 9454 as compared with 9576 for 1891. The deaths during the year were 5507 as compared with 5391 in 1891. 4094 vaccinations were reported by the public vaccinators and 917 by family physicians, and 562 infants who died before vaccination. Debility is credited with causing 602 deaths, or more than any other individual cause, while only 39 deaths are stated to have occurred from unknown causes. Of the other chief causes:—phthisis 532, encephalitis (including meningitis and all inflammatory conditions of the brain) 332, pneumonia 347, bronchitis 253, diarrhœa 393, cholera infantum 300, enteritis 286 were the most frequently.

It is noticeable that 540 deaths or 10 per cent. of the total for the year occurred among the infants in maternity hospitals and foundling asylums, a fact which would indicate the advisability of these institutions being placed under public supervision.

Among the infectious diseases 134 deaths are ascribed to whooping cough, 33 to measles, 14 to scarletina, 54 to diptheria, and 56 to croup, 50 to typhoid (as compared with 65 in 1891 and 101 in 1887.) We have not quoted the death rates given as the true population of Montreal is a very debatable matter.

The expenditure for the department during the year was $84,446.

Bibliography.

Non Nocere. By A. Jacobi, M.D., New York. Reprinted from the *Medical Record*, May 19, 1894.

Remarks upon Appendicitis Based upon a Personal Experience of 181 Cases. By Maurice H. Richardson. M.D., of Boston. Revised and corrected from *The American Journal of the Medical Sciences*, January, 1894, with 213 tabulated cases.

Bone Operations for the Correction of Club-Foot, Based upon an Analysis of 435 Operations by 108 Operators. By H. Augustus Wilson, M.D., Philadelphia. Reprinted from the Transactions of the American Orthopedic Association, September, 1893.

The Sewerage System of New Orleans. From the New Orleans *Times-Democrat*, April 19, 1894.

De L'Hydronephrose Intermittente par le Docteur Lucas-Championnière, Paris. Extrait du *Journal de Médecine et de Chirurgie pratiques*, 25 aout, 1892.

Modification du Taux de L'Uree Dans L'Urine par le Docteur Just Championnière, Paris. Extrait du *Journal de Médecine et la Chirurgie pratiques*, 25 juillet 1893.

Sur la Cure Radicale des Hernies par le Dr. Just Lucas-Championnière, Paris. Extrait du *Journal de Médecine et de Chirurgie pratiques*, 25 novembre 1893.

Rotura de la Uretra por Estrechez. Por el Dr. Ramon Martin Gil, Barcelona, 1894.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian works published in other countries) for notice in this department of the JOURNAL.]

PERIODICALS—MAY, 1894.

CANADA MEDICAL RECORD

Galvano-cautery current obtained from the street current.—A. Lapthorn Smith, p. 172.

JUNE, 1894.

CANADA LANCET.

Vaginal hysterectomy for cancer.—J. A. Temple, p. 295.

CANADIAN PRACTITIONER.

(1.) Address in Medicine before the Ontario Medical Association,—J. E. Graham, p. 399.

(2.) Three cases of McGill's operation for prostatectomy.—A. McKinnon, p. 410.

(3.) A Note on the therapeutics of diuretin.—A. McPhedran, 416.

(4.) Pyæmic infection of the base of the brain, secondary to deep abscess of the neck.—Wm. Oldwright, p. 432.

(5.) A case of cancer of the heart.—Hibbert Hill, p. 435.

DOMINION MEDICAL MONTHLY.

President's address at the meeting of the Ontario Medical Association.—L. McFarlane, p. 163.

(6.) Physiotherapy first.—Edward Playter, p. 171.

Professional privilege and the law of evidence.—W. Seton Gordon, p. 169.

ONTARIO MEDICAL JOURNAL.

Proceedings at the meeting of the Ontario Medical Council.—p. 384.

CANADA MEDICAL RECORD.

(7.) Medical evidence.—Robert Mark, p. 193.

(1.) Dr. Graham, urges the necessity of greater care in the diagnosis of chronic diseases, and especially that we should never rest content with discovering the nature of the ailment without discovering its cause. Two cases of gastric dilatation are cited where a diet of scraped beef, toast and milk was ordered in both instances, with lavage of the stomach and small doses of strychnine. One of the cases rapidly improved while the other was made worse, and in the latter upon analysis of

the stomach contents, pepsin was found deficient and hydrochloric acid absent. By giving peptonized milk and farinaceous foods much better results were obtained. Here the dilatation was only a secondary consideration. In suspected tuberculosis the necessity of frequent and repeated examination of the sputum is insisted on. In three cases of anæmia, the cause was found out and obviated in these with excellent results; in the fourth no improvement followed as the cause was not discoverable.

(2.) In three cases of supra-pubic prostatectomy excellent results were obtained, the general condition improving and the necessity for catheterization being done away with.

(3.) Dr. McPhedran records six cases in which temporary benefit resulted from the use of diuretin, which consists of throbromim, 49 per cent. and sodium salicylate 38 per cent. Case one, was of arterio-capillary fibrosis with asthma; cases two and three were arterio-sclerosis with dilatation and hypertrophy of the heart; case four of mitral incompetency and case five emphysema and asthma. As a rule when the symptoms recurred, a second recourse to the drug was found useless.

(4.) Dr. Oldwright's case occurred in a man of 58, who presented symptoms of retro-pharyngeal abscess which was incised behind the sterno-mastoid, the infection was found post-mortem to have followed the course of the internal jugular vein.

(5.) In Dr. Hill's case the cancer was secondary to a scirrhus growth in the rectum. There were no cardiac symptoms. At the autopsy the cancer was found to infiltrate the bladder and rectum with secondary nodules in the peritoneum, abdominal lymph, glands and liver. Numerous small white cancerous nodules the size of pin heads were found in the substance of both venticular walls and beneath the epicardium and endocardium of the right ventricle (infection apparently having taken place by the growth extending into one of the pelvic veins?)

(6.) Dr. Playter's paper has been already published in full in the May number of this Journal.

(7.) Dr. Mark communicates results of medical examination

in a case where a conviction was obtained in the criminal courts for the rape and murder of two little girls aged 12 and 14 respectively. (The L'Orignal case). Besides some lacerations about the heads and faces there were deep red discolourations about the wind pipe on both sides, apparently corresponding to the imprints of the fingers, appearing as if the right hand alone had been employed in one case and the left hand alone in the other. The hyoid bone was broken. The conjunctivæ and tongues were suffused, the brain and lungs congested and right heart full of blood. The stomach, bowels, kidneys, bladder, ovaries and uterus were normal. The external genitals were much lacerated and the vagina was partially ruptured in the one case, and a complete perforation 1 in., in diameter situated posteriorly was found in the other. In the vagina not perforated spermatozoa were detected. The hands of the younger girl were severely wounded, the injuries being such as could have been inflicted by strong and long finger nails. Examination of the accused showed the nails to be long and chisel like, and a cast of them was at once made. The mutilated hands and the genitals were preserved in spirit and exhibited at the trial, together with photographs of the injuries.

The details of this interesting case do not, however, form the real objective point of Dr. Mark's paper, which is intended also to show the nature of medical expert evidence and how it should be given. He explains at the beginning that "ordinary witnesses are only required to state facts of which they have a personal knowledge, but upon skilled and scientific witnesses weightier responsibilities rest; their opinions are often demanded to elucidate matters that are obscure to the ordinary mind." As an instance of how this should be done the author quotes as follows from the record of the trial: "The learned counsel asked me: 'Do you swear these girls died from asphyxia?' I replied 'No, my learned friend. I presume you vie with me in an admiration of the work by Tidy on Medical Jurisprudence, in which he wisely and truly remarks: '*We begin to die at the head, or we begin to die at the heart, or we begin to die at the lungs*,' and the McGonigle girls

from the injuries inflicted on their throats began to die at the lungs, and in about twenty or thirty minutes died at the heart; the primary cause of their death was asphyxia, but mental and physical shock tended to produce death in the brain and heart.'"

TOXINES IN CHOLERA.

F. F. Wesbrook, M.D.,

Contributions à l'étude des toxines du choléra, Annales de l'Institut Pasteur. Vol. VIII., p. 318. 1894.

The investigations that have been made since 1887 into the pathological chemistry of infectious diseases, while throwing a new, not to say a lurid, light upon the mode of action of the pathogenic bacteria have at the same time, from a chemical stand point, rendered confusion worse confounded. It seems but a little while since Brieger published his brilliant demonstration of the toxic powers of certain alkaloids—ptomaines—obtained from tissues, the tissues of affected animals, or again from cultures of pathogenic bacteria, and we were all ready to look upon ptomaines as the essential agents in the production of many of the symptoms of zymotic diseases. Next Leber and Christmas described toxic bodies having proteid reactions, obtainable from cultures of pyogenic microbes, and Hankin went further and isolated a toxic albumose from cultures of the anthrax bacilli—an observation made use of by Brieger and Frankel to isolate a series of albumose, or, as they termed them, toxalbumines, from a long series of growths of pathogenic microbes. As a result, the doctrine of toxalbumines rapidly replaced the doctrine of ptomaines, notwithstanding the fact that a note of warning had already been sounded by Roux and Yersin in their remarkable studies upon diphtheria. These last observers pointed out that the toxic body isolated by them was found in such infinitesimal quantities, and possessed such characteristic properties, that on the whole it must be regarded as one of the order of ferments. Not to pursue the further studies in detail, it may be said that some observers have found albumoses or peptones, others globulines, others again, like Sidney Martin, indications of both albumoses and ferments, and

these bodies have been discovered not only among the products of the metabolism of pathogenic microbes cultivated in various media, but also in the tissues of animals affected by one or other disease.

Nor does this represent the full picture of our present confusion—for various thoroughly reliable observers, working with the same microbe, but with different culture media, have obtained bodies having similar toxic characters but diverse chemical reactions.

This confusion led Duclaux, so long ago as 1890, to suggest that the peptones, albumoses and other proteid-like bodies described by various observers were not the true toxines, and he suggested that the true toxines, whatever be their nature, were mechanically carried down in the process of precipitation by the alcohol, sulphate of magnesium, or whatever other precipitant had been employed, but though the condition of affairs has been becoming more and more chaotic since this suggestion was made, no one had, until Wesbrook, seriously attempted to work out the cause of the divergencies of the various investigators along what clearly are the only satisfactory lines.

To this end Wesbrook employed the cholera spirillum. The toxines produced by growths of this organism have been variously described as peptones, globulins, albumoses and alkaloids. Instead of employing one method of culture, Wesbrook made growths in several different media, eggs (Hueppe's method), alkali-albumine devoid of peptones, (Sydney Martin's method), peptone solutions, solutions of aspariginate of sodium (Uschinsky's method). After the spirilla had been grown in these media for several days, he made chemical analyses of the fluids, and as the result of a long series of observations he arrived at the following conclusions :

I. That the substances obtained from the cultures in the different media have not the same chemical constitution.

II. That cultures in eggs give a mixture of proteid matters which it is not possible to separate ; cultures in alkali-albumine, a deutero-albumose, traces of proto-albumose and variable

quantities of (?) alkali-albumine; cultures on aspariginate of sodium, a substance which gives a feeble xanthoproteic reaction (proteid) but no biuret reaction (albumose and peptone).

III. That the peritoneal fluid of guinea pigs inoculated with the cholera spirilla gives only a slight xanthoproteic reaction and contains neither proto-nor deutero-albumose.

IV. That all these substances, while evidently differing chemically, are similar in their physiological effects. All of them can cause death, preceded by like symptoms, or given in smaller doses can confer immunity.

V. That the only conclusions to be drawn from these results are :—Either that the cholera spirillum produces different toxines, according to the medium of culture, a theory that is extremely improbable, or that the toxine is a constant and uniform substance, associated with the proteid materials contained or formed in the medium of culture.

VI. In favour of this latter view is the fact that the material obtained from the solutions of aspariginate of sodium, a medium almost completely free from proteid matter, is a toxine which gives no reaction which allies it to albumoses, peptones, globulins or alkaloids, and yet this toxine is physiologically peculiarly powerful.

It will be seen, therefore, that Wesbrook's researches tend to confirm Duclaux's opinion, to which we have referred above, according to which the substances so often spoken of as tox-albumines are mechanical mixtures of albuminous bodies with toxines rather than true chemical compounds.

Dr. Wesbrook is a graduate of the University of Manitoba, whose good work in bacteriology has already resulted in his being elected John Lucas Walker student in Pathology of the University of Cambridge. It is a pleasant duty to record so sound and useful a research accomplished by a Canadian investigator.

Society Proceedings.

THE MONTREAL CLINICAL SOCIETY.

Stated Meeting, March 3rd, 1894.

JAMES JACK, M.D., PRESIDENT, IN THE CHAIR.

Notes on the General Surgery of Felons.—Dr. HACKETT classified inflammation of the fingers as follows:—(*a.*) Dermatitis; (*b.*) cellulitis of the finger; (*c.*) suppurative thecitis; (*d.*) periostitis or osteitis of the phalanges; (*e.*) paronychia.

These different conditions were described and their surgical treatment fully considered. In simple cellulitis care should be taken not to incise too deeply, for there is danger of carrying infection by this means into the deeper tissues.

Hydrogen peroxide was recommended as being extremely valuable as a wash after free incision in suppurative thecitis.

Dr. CAMPBELL felt that Dr. Hackett had presented his subject very clearly, and the members present could not fail to have a better idea of the diagnosis in cases of inflammation of the fingers. He also referred to the marked constitutional effects noticed in many of these cases.

Breath Pictures or Pneumotypes.—Dr. H. D. HAMILTON presented several pneumotypes, taken after the method of Sandmann, of Berlin.

The patient is directed to breath through the nostrils on to a piece of slate cloth, on the surface of which the moisture of the breath congeals. A dry powder is then dusted over this, fixing the picture.

By this method obstruction of one or the other nostril is recorded.

The meeting then discussed several matters of business.

Stated Meeting, March 17th, 1894.

DR. LOCKHART IN THE CHAIR.

Dr. Binmore was elected a member of the Society.

Hemiplegia in a Child of Two Years of Age.—Dr. SCHMIDT presented a case report under the above title.

The patient when first seen was noticed to be breathing heavily. Ptosis of the right lid, immobility of the right eyeball and of the left arm and leg were noticed. Pupils equal, tongue coated, heart normal. Temp. 102°, Some evidences of rachitis. Six days later ptosis of both eyelids was marked, the child had slight convulsive seïzures and then died. Dr. Schmidt considered the condition due to thrombosis.

Dr. CAMPBELL thought the symptoms, as related, pointed more to tuberculosis.

Dr. ORR considered the lesion was situated in the medulla and that it was tubercular in character.

Dr. CAMPBELL mentioned a case he had recently seen of unilateral convulsions in a child where the opposite side was flaccid, but the reflexes somewhat exaggerated during the convulsive stage. After the convulsion ceased the reflexes on the flaccid side, previously exaggerated, were absent, but those on the side convulsed, were markedly exaggerated. An explanation of the condition was hard to find.

Drs. CAMPBELL and KENNETH CAMERON then presented a series of pulse tracings taken with Marey's and Dudgeon's sphygmographs. The tracings showed very satisfactorily the effect of forced respiration, asphyxia, inspiration of ether, and nitrite of amyl on the pulse.

The tracings with Dudgeon's instrument were noticed to vary with the tightness of the strap binding it in place.

Dr. LOCKHART then related a case which had recently come under his observation. The patient, a male, aged 42, had come up from business feeling unwell, and when seen was found unconscious. There were no signs of paralysis, temp. 103°.

Ice was applied to the head. One drop of croton oil and an ounce of Mag. Sulph. failed to move the bowels. No albumen or sugar found in the urine. Death took place three days later, being preceded by convulsive seizures.

Dr. KIRKPATRICK mentioned having seen a somewhat similar case in the Montreal General Hospital. Post mortem intense cerebral congestion was noted.

Stated Meeting, March 31st, 1894.

JAMES JACK, M.D., PRESIDENT, IN THE CHAIR.

Fibro Neuroma.—Dr. GEO. BROWN showed a small fibrous tumour he had removed from a patient's hand. Two years ago the patient had lost the middle finger of the left hand as a result of a suppurative thecitis. A very painful spot appeared just at the side of the incision some months later which rendered the hand almost useless.

Treatment in Scarlet Fever.—Dr. ED. BLACKADER read an interesting paper under the above heading. The use of iron, quinine, ammon. carb., liq. ammon. acet., digitalis and strychnia in the different phases of the disease was considered. Special stress was laid upon the value of iron and small doses of pot. chlorate at frequent intervals.

Locally as a spray, any alkaline solution was valuable, supplemented by frequent painting with a solution of iron and pot. chlor. in glycerine. Peroxide of hydrogen, listerine and carbolic acid applied to the throat were of value. Basham's mixture was of signal value in cases with renal complications.

Dr. CAMERON considered pot. chlor. a harmful drug in this disease, as it tended to irritate the kidneys. Hydrogen peroxide applied to the throat had been of great service in his experience, but it must be of good quality and not too acid.

Dr. KIRKPATRICK had not found pot. chlor. of much value in his experience. He considered the main points in treatment were milk diet, the avoidance of cold and the

early antiseptic treatment of the nose and throat, hydrogen peroxide being the most valuable for this purpose.

Dr. ALLAN had met with cases where the milk supply had been the carrier of infection.

Dr. GEO. BROWN thought the use of the swab and brush dangerous, as the pharynx was often eroded by too vigorous swabbing. Sprays or gargles being free from this danger, he considered to be better. Mentioned two cases where hyperpyrexia had been the cause of death, no treatment having proved effectual in reducing the temperature

Dr. CAMPBELL referred to value of Peroxide of Hydrogen. He mentioned a case where Basham's mixture appeared to have been the cause of hæmaturia. Applications of oil to the skin he had found of little value as the oil dried so rapidly or else was rubbed off.

Dr. REID spoke of the value of free stimulation in hyperpyrexia.

Dr. JACK considered lanoline mixed with glycerine and applied thickly, of particular value in the treatment of the skin.

A Case of Apex Pneumonia.—Dr. GEO. BROWN related the report of a case of apex pneumonia. The delirium had been very marked. The pulse and respiration ratio led him to diagnose pneumonia, five days before any physical signs were manifest.

Dr. ORR referred to the freqnency of apex pneumonia in children and to the value of pulse respiration ratio in diagnosis even in absence of physical signs.

Dr. CAMPBELL mentioned the case of a child of two years of age where the pulse respiration ratio was affected eight days before the dulness was apparent.

Stated Meeting, April 14th, 1894.

JAMES JACK, M.D., PRESIDENT, IN THE CHAIR,

Locomotor Ataxia with Gastric Crises.—Dr. CAMPBELL presented the patient before the Society. He was a police-

man of middle age and had been the subject of severe gastric pain coming on suddenly at intervals of about a month, and lasting from two to fourteen days. The pain was agonizing and of a griping character, but was always relieved by morphia. There was no ataxia present. Pupils somewhat fixed, left being larger than the right. Tendon reflex absent. Movement of crossing limbs incoordinated. History of syphilis. Had been treated with pot. iod.

Dr. SPRINGLE who had seen the case in private, mentioned that the patient always referred the pain to what he had eaten.

Dr. GUNN considered absolute rest essential in treatment of disease of the cord, and suggested rest in bed with a back splint in this case.

Dr. GUNN then gave an interesting account of the methods adopted in the histological examination of the blood.

Stated Meeting, April 28th, 1894.

JAMES JACK, M.D., PRESIDENT, IN THE CHAIR.

A Case of Erythema.—A report of a case as above was presented by Dr. Orr. A child, aged 15 months, had been ailing for five days before Dr. Orr had been called in. The child was found covered with a profuse eruption of thickly set macules and papules of different sizes, which disappeared on pressure and were of a dull red colour. Temp. was normal. No sore throat nor cough. In three days this rash entirely disappeared. A new rash was then noticed breaking out on the face and neck, beginning as small red papules, rapidly extending and becoming raised and white. This rash was accompanied by much œdema of the face, and was very itchy. The whole disappeared in a few hours from the face, only to break out on the limbs and trunk. Diarrhœa was very troublesome at this time, and a lateral incisor appeared during the attack.

Dr. EVANS mentioned having met with similar cases, and

in many of these condensed milk was the food used. With a change of diet the condition rapidly disappeared.

Dr. MORROW mentioned a very marked case of urticaria œdematosa he had met with in a child of six weeks.

Dr. CAMPBELL mentioned a case where every time the child was exposed to a cold wind, the exposed parts became swollen and red, but without any pitting on pressure.

Dr. EVANS then reported a case of severe hæmorrhage from the site of a recent chancroid.

Dr. GEO. BROWN reported an interesting case of intussusception of the bowel in an infant of eight months, the condition coming on during an attack of severe vomiting. The sausage like tumour could be felt on the left side below the border of the ribs. He injected a pint of warm water into the bowel with the child hanging head down. Suddenly, while gently massaging it, the tumour was felt to give way and the child's symptoms were immediately relieved.

Stated Meeting, May 12th, 1894.

DR. GEO. BROWN IN THE CHAIR.

Renal Atrophy.—Dr. WILLIAMS exhibited a pair of kidneys removed from an old man, the subject of atheroma, who had died of cerebral hæmorrhage. The left kidney was atrophied and surrounded by a dense mass of adipose tissue. The right kidney showed compensatory hypertrophy, being very large indeed. It was in a granular condition. The patient during life had no symptoms pointing to a lesion of the kidneys.

Stated Meeting, May 26th, 1894.

DR. KENNETH CAMERON IN THE CHAIR.

Angina Pectoris.—Dr. MORROW read the report of an interesting case of angina pectoris where the attacks were characterized by expectoration of large quantities of frothy mucus of pinkish color.

Patient used as much as ♏ XXV. of nitrate of amyl in an hour, and it was a question if the frothy mucus was not due to its use.

A condition of general arterio-sclerosis, with incompetency of the aortic valves was present.

Considerable benefit resulted from rest in bed with a course of pot. iod. and arsenic, but the patient finally died while on a spree.

Unusual Pharyngeal Eruption.—Dr. H. D. HAMILTON presented an interesting report of a peculiar case. The patient, a female, aged 45, married for 26 years, complained of blisters forming in the mouth and throat, and of the loss of 42 lbs. in weight in the course of a year.

The mucous membranes were found spotted with yellow-white patches, remains of collapsed bullæ. They could also be seen on the gums, roof of the mouth, the soft palate, uvula, pillars of fauces, tonsils and part of the wall of pharynx. The membrane was red and injected. Submaxillary glands enlarged. Vesicles were found on forearms ranging in size from pin's head to a fifty cent piece, contents being clear and margins red.

Later these formed all over the body. Disease began in the fall of 1892, new crops of bullæ coming out every week.

At one time mucous casts were noticed in the evacuations from the bowel. Patient very costive. Temperature often slightly elevated in the evening, pulse being small and compressible. The question asked was this a case of pemphigus or dermititis herpetiformis.

Dr CAMPBELL made a few remarks upon the case and was inclined to look upon the case as one of dermatitis herpetiformis.

Stated Meeting, June 9th, 1894.

JAMES JACK, M.D., PRESIDENT, IN THE CHAIR.

Drs. Bazin, Byers, Fisk, Gorrell, Manchester, Kinghorn, and Rimer of the Montreal General Hospital ; Drs. Colvin, Davidson, Fry, Shaw, Mathewson, Nicholls, Robertson and

Cameron of the Royal Victoria Hospital, and Dr. Denny of the Western Hospital were all elected as temporary members.

Tubercular Peritonitis.—Dr. GEORGE BROWN read the report of a very interesting case of tubercular peritonitis. The patient was aged 2½ years, when first seen, and complained of dyspnœa, swelling of the abdomen, a feeling of oppression in the cardiac region, and diarrhœa.

Family history, phthisical, his mother having since died of that disease.

Child was bottle fed and was generally quite healthy up till two years of age.

Illness began with an attack of bronchitis, after which the child gradually failed. Was at first treated for indigestion, but no change taking place in his condition, Dr. Brown came to the conclusion he was dealing with a case of tubercular peritonitis. The abdomen measured 29 inches in circumference. Four weeks later this had been reduced to 22 inches. Death finally resulted some six weeks later from meningitis.

Post-mortem revealed extensive tubercular disease of the intestines which were matted together. The mesenteric glands were enlarged and caseating. The lungs were full of miliary tubercles.

Dr. EVANS then mentioned several cases which he had seen in Great Ormond Street Hospital for sick children, specially calling attention to two cases which marked different types of the disease.

In one, a child of seven years, there was great abdominal distention due to fluid. Patient was frequently tapped, and under good diet, rest, and tonics, improved rapidly until when last seen, after some weeks at the seaside, he appeared cured. In the other case, a child of about three years of age, there was no distention. Patient was greatly emaciated. Intestines could be felt through the abdominal wall to be matted together. In one spot, an inch below the umbilicus, a red area appeared and finally ruptured, dis-

charging fæces. This fistula continued discharging for some weeks until the child's death.

Disease has been frequently traced to cow's milk, so the source of milk used in infant feeding must be kept under close observation.

Dr. ALLAN pointed out how common tubercle in cattle was becoming in this country, and suggested that all milk should be sterelized.

Dr. KIRKPATRICK spoke of the benefit following laparatomy in many cases of tubercular peritonitis.

A Case of Cervical Pregnancy.—Dr. KIRKPATRICK read the report of an interesting case of the above condition. (See page 15 of the JOURNAL.)

Dr. EVANS questioned the diagnosis of cervical pregnancy, and mentioned cases of abortion where he had found a similar condition of the cervix. The product of conception was expelled from the uterus by its contractions, but owing to the external os not dilating, the cervix becomes greatly drawn out and retains the best part of the ovum, while the uterus being now emptied contracts to almost its normal size above.

Dr. BROWN remarked that in abortion the fœtus so frequently came away alone the rest of the ovum following later.

Dr. KIRKPATRICK in reply still held to his diagnosis of cervical pregnancy as the external os was dilated and did not obstruct the expulsion of the placenta to any marked extent. The internal os was contracted and the uterus not enlarged.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, May 18th, 1894.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Morphœa.—Dr. GORDON CAMPBELL exhibited a case of this rare skin disease. The patient, a Russian girl about 25 years of age, showed in the left mammary region, an irregular patch of an ivory white colour, having a smooth and almost polished appearance and surrounded by a violet zone. The skin over the affected area was distinctly thickened. The symptoms were a slight tingling and itching on the patch. It had been present for the past nine months, while she has been living three years in this country. This is a very rare affection, only occurring once in several thousand cases of skin diseases, and, as far as he (Dr. Campbell) could learn, it is the first case of the kind ever seen in the General Hospital. This affection is regarded by Radcliffe Crocker as a form of diffuse scleroderma.

Dr. FOLEY had only seen three such cases. Dr. Crocker's statistics gives its frequency of occurrence as 6 in 10,000 cases. He wished to know if Dr. Campbell had tried the massage treatment in this case.

Dr. LAFLEUR had seen one case of diffuse sclerodema which, although spread over the whole body, bore a close resemblance to this case. The infiltration was even more pronounced than here, giving the skin a peculiar brawny feel, and although the blanching of the skin was well marked, there was yet no zone of redness. It was at first thought to be an œdematous condition ; but as there was no pitting on pressure, this view had to be given up.

Dr. GORDON CAMPBELL, in reply to Dr. Foley, said he had purposely refrained from active treatment, as he wished to preserve the features of the case in all their distinctness for the members of the Society. An interest-

ing point about morphœa is that it occurs on the breasts of woman, and it is thought that the irritation of the corsets acts as a causative agency. That does not seem unlikely to be the case here, as the patch occurs right on a line with the upper margin of the corsets.

Caries of the Vertebræ.—Dr WILLIAMS exhibited a specimen of tubercular spine, removed at a recent autopsy at the Royal Victoria Hospital. The tenth dorsal vertebra was affected, the changes in which were noticed chiefly in the body. The latter was increased in size, extending slightly forwards, laterally,and backwards into the canal. As a result of this last extension, the canal was diminished in size by five or six centimetres, which gave rise to a pressure on the spinal cord. The intervertebral substance, however, seemed slightly affected, the bone having grown over it in the canal.

Dr. ADAMI called attention to the fact that in the intervertebral disc immediately above the tenth dorsal vertebra there was a small calcareous mass evidently tubercular in origin, and indicating apparently, from its relationship that the disease had commenced in the intervertebral disc and thence had extended into the bone.

Dr. JAS. STEWART had this case under his care, and the symptoms pointed clearly to a compression myelitis. For a time there were marked symptoms of irritation of the nerve roots. The extreme tenderness of the bones was an interesting feature, and one not always seen in such cases; for instance, Dr. Bell has at the present moment two cases of tuberculosis of the spine under his care in the Royal Victoria Hospital, and in neither of them is there any special tenderness. The question arose whether an operation in this case would have been followed by any beneficial results, but as the patient was so far reduced when admitted to the hospital, it was doubtful whether he could stand the shock of an operation.

Dr. GUNN had also seen this case. The patient came to the Hospital complaining of lumbago, lasting over a year.

He felt pretty well otherwise. Examination revealed some tenderness over one or two vertebræ, and it was on this account that he was admitted. Considering this case, Dr. Gunn thought that all cases of lumbago, accompanied by tenderness of any of the vertebræ, should be regarded with suspicion.

Dr. JAS. BELL took a great interest in cases of this kind. It seemed to him that in a case where the cord is pressed against the unyielding vertebral arch, the removal of that arch should relieve the symptoms, provided it was done early enough. But as this is seldom the case, it becomes a puzzling question to decide what cases to operate upon, and what ones to leave alone. The opinion held by many in the profession that in these cases of paraplegia the condition was apt to undergo spontaneous improvement, had much to do with deterring men from early, operation and in his experience this opinion had very little foundation. He could recall several cases where he regretted not having operated early, when the paraplegia first appeared, and where he would have operated were it not for this prevaling impression. In cases of this kind he thought the actions of surgeons should be prompt and fearless, for it requires only a comparatively short time for degenerative changes to take place in the distal portion of the cord. He had already operated upon two cases, in both of which the paraplegia had been complete for two or three months. Both seemed to improve for the first two or three days after the operation, but in neither was the improvement permanent. He asked how long after the paraplegia develops can one reasonably expect recovery to take place on removal of the pressure ?

Dr. JAMES STEWART, in reply to Dr. Bell's question, said that in an ordinary case of descending degeneration of the lateral columns, recovery may take place many months afterwards, if the pressure is of an ordinary kind. Of course, where there has been absolute obliteration of all the functions of the column, one would not expect restoration to take place after three or four months.

Osteo-Sarcoma of Femur.—Dr. WILLIAMS showed a specimen of a bone tumour occurring in the lower portion of a femur, removed by Dr. Kirkpatrick, which measured about 20 inches in circumference. The tumour was lobulated in outline, and quite a large hæmorrhage had occurred in front of the knee joint, and numerous hæmorrhages were noticed in various parts of the growth. The inner surface of the patella and the head of the tibia were somewhat eroded.

Dr. ADAMI said that microscopically the tumour presented the characters of a periosteal sarcoma of the large mixed cell type. A little distance from the surface the cells were to be found embedded in a hyaline stroma, and the section suggested the possibility that we were dealing with a malignant enchondroma. In the more central portions hæmorrhagic and necrotic areas existed. Areas also were seen which had almost the appearance of cylindroma. An interesting point in this tumour was the tendency which apparently existed for the tumour substance to radiate from the joint. The early history also received in this case, was the history of a joint trouble. At first the growth was periosteal, but after a time it grew inwards also ; yet the periosteal growth always predominated, as could be determined by observing the shaft where it could be noticed that the tumour extends to a higher point externally than internally.

Dr. KIRKPATRICK showed the members a photograph of the limb taken prior to the operation. The history extended back only ten months. The patient was a farmer, 22 years of age. Sharp transient pain in the knee joint was the first symptom noticed. There is no history of injury. At the end of four months he could not bend the knee beyond a right angle. Until the 6th month it was regarded as an ordinary synovitis, and treated with blisters, etc. At the seventh month two lumps noticed at the knee joint ; followed, two weeks later, by similar lumps in the popliteal space. In the middle of the eighth month these lumps had

grown into one mass around the knee joint ; and the circumference of this mass measured eighteen inches. One month later, or about the end of the ninth month, it had increased to a circumference of twenty-two inches ; at which time the operation was performed. Ten months ago the patient weighed over 200 pounds, but when he entered the hospital he only weighed 146½. Amputation at the hip joint was performed on April 22nd by Wyeth's method. The limb was transfixed by two iron skewers, which were pressed completely through the limb, and proved a most satisfactory means of fixing the esmarch. No blood was lost when the circular cut was made, except what was in the limb below the point of removal, which however, was considerable for owing to the nature of the tumour, no bandage was employed to empty the limb of blood. After loosening of the skewers and the constricting band below them, much blood was lost. To counteract the effect of the loss, two hypodermics of strychnia, and two enemata of saline solution were administered, and it was noticed that each of the latter had a marked and almost immediate good effect on the pulse. The patient is now doing well and going about the ward. The wound was dressed in the ordinary way.

Intra-Capsular Fracture of the Femur.—Dr. WILLIAM'S showed a specimen which was obtained by Dr. Adami from a woman, 75 years of age. She lived three years after the fracture occurred and was able to walk about with the injured limb. The specimen shows that no bony union had taken place ; numerous fibrous bands pass across the fractured surfaces, uniting them with fibrous material so dense that it resembled cartilage, and was firm to the feel. In reference to a discussion which took place at a previous meeting as to how often, if ever, bony union occurs in these cases, Dr. Williams remarked that he had looked up all the specimens of this kind in the McGill Museum, and found that out of ten specimens of the unimpacted intra capsular fractures, not one showed bony union; while of two of the impacted variety, one showed union.

Hyperostosis Following Fracture.—Dr. WILLIAMS exhibited a tibia and fibula, illustrating this condition. The tibia showed signs of two or three old fractures which had occurred at different times. A large bony growth extended between, and united the tibia and fibula in their upper portion. This bridge, as it may be called, of bone is of interest, inasmuch as it frequently takes place in either the leg or forearm when both the bones are broken. Firmly attached around this bony growth, was a large mass of firm fibrous tissue with numerous sinuses from which pus was oozing.

Dr. JAMES BELL remembered the subject of the last specimen shown. He was a man about 40 years of age, and a hard drinker, who had a compound fracture of the leg, from which he recovered with difficulty, but was ultimately discharged from the hospital with his wounds all healed and his bones united. He soon had another spree in which he again fractured his leg (again a compound fracture) in the same place.

Exostosis Bursata or Exostosis Cartilaginia.—Dr. BELL showed a specimen. This form of exostosis differs from the ordinary by growing in the neighbourhood of joints, from the epiphysial line, and the growths are usually directed away from the joint at an angle of 45° from the shaft of the bone. They are covered at the free extremity with cartilage, and enclosed synovial membrane which often contains a large number of free bodies. The first case of this kind which came under Dr. Bell's care was in 1888, at which time only two cases were on record, the report of his case being then the third. In Prof. Billroth's case 25 free cartilaginous bodies were found within the synovial sac, while his first case contained 55 similar bodies. Bergmann reports a case in which 500 were found. The exostosis in the present case was situated in the region of the shoulder joint, and grew from the bicipital groove at an angle of 45° from the shaft. As to the pathology of these growths—they are generally explained by Cohnheim's

theory of embryonic cells, lying dormant until something occurs, or the conditions are favourable, for them to take on active growth.

Cultures of Gonococci.—Dr. ADAMI reported a case of gonorrheal synovitis, the clinical history of which is rather interesting as showing the importance of bacteriology as aid to diagnosis. The credit of reporting this case was due to Dr. H. S. Shaw, resident surgeon at the Royal Victoria Hospital, who, Dr. Adami stated, had done all the work connected with it. The patient was a man with a swollen knee and a slight thin discharge from the urethra. The question arose as to whether or not it was a specific synovitis. The knee having been rendered carefully antiseptic, a Pravaz syringe was used to withdraw some drops of clear fluid which were immediately spread upon the surface of two tubes of glycerine agar, which ten days afterwards showed the gonococci culture. Subsequently gonococci were discovered in the urethral discharge. Dr. Adami remarked that it is of importance to know that the gonococci may be cultivated on glycerine agar, a material which is easily obtained, where hitherto it was thought to require blood serum for its growth. He pointed out that the growth was very slight and that it might be not so much a growth upon the glycerine agar as upon the fine film of synovial fluid which covered it.

Pseudo-Membranous Enteritis.—Dr. GUNN read a paper upon this subject which will appear in a future number of the JOURNAL.

Dr. LAFLEUR remarked that he had seen one of the cases reported by Osler, while at the Johns Hopkins Hospital. The ailment did not impress him as being very distressing A slight looseness of the bowels, with the occasional passage of very perfect intestinal casts, which microscopical examination showed to be composed of a hyaline laminated material, with here and there desquamated cells from the mucosa, but with very few leucocytes or red blood cells.

As far as he could remember the treatment was local—washing out the bowels, etc.

Dr. ALLAN had a case of this kind which came under his care at the Montreal Dispensary. She passed large quantities of these casts daily.

Dr. MORROW wished to know if this condition was analagous to the somewhat similar condition which occurs in the respiratory tract.

Dr. GORDON CAMPBELL had seen a case of this nature in which the chief trouble was the involuntary passage of the casts. They were most commonly passed during sleep, and for a time it was not settled whether they were of rectal or vaginal origin.

Dr. GUNN, in reply to Dr. Morrow, said it was his impression that the pseudo membranous condition which occurred in the bronchi was inflammatory and allied to the diphtheritic form. There was consequently no similarity between them.

Stated Meeting, June 1st, 1894.

J. B. MCCONNELL, M.D., 2ND VICE-PRESIDENT, IN THE CHAIR.

Dr. S. R. Mackenzie was elected an ordinary member.

Chronic Nephritis in the Dog.—Dr. ADAMI exhibited specimens, and gave the results of his examination, of a case of chronic interstitial nephritis in a dog, submitted to him by Dr. Wesley Mills. The two kidneys differed in size, the right being the larger, and to the naked eye presented the condition well known as chronic interstitial nephritis. The capsules in both were thickened; they peeled off without great difficulty, revealing a nodular surface beneath. They cut firmly: the sections showing dilated pelves, and the cortex varied in thickness, in some places corresponding to the depression of the surface, and was almost entirely atrophied; that of the right kidney, on the whole, appeared less affected than that of the left. Microscopical examination revealed a condition similar to

that seen in chronic interstitial nephritis of man. There was a general fibrosis of the medulla, with occasional tubules containing traces of uratic deposit, while the pelvis of the left kidney contained a minute calculus. The ureters in both had rather thickened walls, but neither in these nor in the bladder was there found any evidence pointing towards an obstruction to the flow of urine.

Commenting on the existence of this disease in the dog, Dr. Adami remarked that while in his experience, as well as in that of Dr. Mills, it was of rather rare occurrence, yet it was easy to conceive causes for its production; inasmuch as the factors of excessive inception of nitrogenous food, coupled with insufficient exercise, which are recognized causes of the condition in man, are both apt to prevail in the life of the dog. There is a tendency towards fibroid valvular change frequently observed in dogs, but arterial sclerosis he had never observed. In over-fed dogs an eczematous condition of the skin is not uncommon, and taking these indications of the gouty diathesis into consideration, he was inclined to believe that, if cirrhosis of the kidney in dogs was not often recognized, it was because careful autopsies have not been performed in sufficient number.

Dr. WESLEY MILLS had received these kidneys from Dr. Darling, a graduate of the Faculty of Comparative Medicine, who thought the condition very rare, and published an account of the case in the *Journal of Comparative Medicine*, which report Dr. Mills read in detail. Commenting on the case, Dr. Mills remarked that although diseases of the kidneys are considered of rare occurrence amongst the lower animals, systematic autopsies are not by any means frequent, especially in the case of the dog. He was impressed with the truth of Dr. Adami's view of the case, as seen by the history; this animal was fed on flesh three times daily, and had a hypertrophied left ventricle. Moreover, it is well known that dogs are very susceptible to rheumatism, and rheumatism is allied to gout. The skin

of the dog is easily disordered, and almost every ailment he is subject to, expresses itself by some abnormal condition of that portion of his anatomy.

In reply to a question of Dr. REED as to whether albuminuria ever occurred amongst dogs, Dr. MILLS remarked that the matter had never been much looked into owing to the great difficulty of catheterising dogs. He had worked upon the urine of dogs, and he could say, as to healthy animals, that there was a certain amount of uric and oxalic acids as well as a great deal of sulphates in the normal urine.

Angioma and Adenoma in a Woodchuck.—Dr. ADAMI showed the liver of a woodchuck, which had also been sent him for examination by Dr. Wesley Mills. At the right extremity of the organ a tense bulging could be seen which extended deeply into its substance, as well as behind, below, above, and in front of it. Upon cutting into this mass, it was seen to be sharply circumscribed, somewhat paler than the normal liver tissue, with here and there spots of a deeper tint, marking hæmorrhages or dilated vessels Microscopical examination of the tumour revealed different conditions in the periphery and the central portions. The peripheral specimens showed adenoma of the liver cells, not biliary adenoma which is more common in man, but an overgrowth of the liver cells proper which, however, were not regularly arranged in lobes with the bile ducts separating and encircling them, as in normal liver, but more scattered. The central portion of the tumour showed, in addition to the hæmorrhages already noticed, dilated vessels and cavernous-like spaces, characteristic of angioma. The combination of the two conditions then, adenoma and angioma, make it extremely interesting as well as rare. Comparing this with analgous conditions found in the human liver, Dr. Adami remarked that in man the liver is perhaps the most frequent seat of angiomata; but a combined condition as we have here is very unusual in the lower animals, the tendency is to have adenoma

develop rather than carcinoma ; and that the former is the condition here seems confirmed by the well defined outlines of the tumour and the absence of any sign of infiltration into the surrounding tissue.

Dr. WESLEY MILLS remarked that the woodchuck in question was one of the animals he had been rearing and studying, with a view to arrive at some sounder knowledge on the question of hibernation. This was the one which did not hibernate. He obtained it when quite young, and kept it for three years, and without having ever shown any symptoms of being unwell it was found dead one morning in the cage. At the post-mortem he noticed a dark mass standing out in the folds of the mesentery connected with the liver ; there seemed to have been considerable hæmorrhage which he thought was the cause of the sudden death. At the same time it may be noted that it died in the spring, a season when these animals' vitality is at its lowest, and but little is required to end their career.

Dr. LAFLEUR wished to know why Dr. Adami considered adenomata of the liver very rare in man. Although he himself only remembered having seen one case of such, yet quite a number of these tumours had been reported, and the condition seemed to be common in France.

Dr. ADAMI in reply said that the cases of ademonata reported, as well as he could recollect, were only biliary adenomata ; not adenoma of the liver cells as in this case.

Ovarian Cyst.—Dr. ADAMI exhibited a large ovarian cyst received from Dr. Alloway. It consisted of an enormous sac, within which were secondary sacs, or daughter cysts, and was a typical example of an ovarian cystoma, the interest in the specimen being in the one huge sac.

Dr. ALLOWAY stated that the patient was an old woman, 61 years of age, and was remarkable for the activity which she showed considering her age and the enormous distension of her abdomen. She complained of no pain, but suffered from a complete procidentia of the pelvic contents. It was this latter condition which first led Dr. Alloway to

doubt the primary diagnosis, that the tumor was connected with the liver, and on further investigation he found he could separate the border of the liver from the upper portion of the tumour; the dull note over the tumour was continued into the pelvic cavity. The doubt as to diagnosis was the most interesting feature in the case.

Ovarian Cyst.—DR. ADAMI showed a second specimen of an ovarian cyst received from Dr. Alloway. This also showed secondary cysts, but not so highly developed as in the former case. There seemed to have been a certain amount of inflammation about the main sac.

Dr. ALLOWAY.—The patient was an unmarried woman, 40 years of age, who had been suffering from, and been under treatment for the past six months, for recurring attacks of pelvic inflammation. Recently the abdomen began to enlarge very much, and seeking advice, a diagnosis of ovarian tumour was made. The whole cyst wall was united to the parietal peritoneum, and in some places to the intestines. These adhesions were very dense and had to be separated inch by inch, thereby increasing greatly the difficulty of the operation. The intestines were of the colour of port wine, and the coils were united together by a soft gelatinous material, which was easily broken down without injuring the bowel. This latter condition Dr. Alloway had never before seen in abdominal sections, and thought it might have been the result of the very recent peritonitis.

Tubal Pregnancy.—Dr. ALLOWAY gave the following history: The patient, a lady 28 years of age, had four or five miscarriages, never having a full term child. She had her last miscarriage about six weeks ago, which was followed by a metrorrhagia of three weeks standing. He found the parts so exquisitely tender as to preclude exact diagnosis, at the same time he came to the conclusion that there was some mass growing upon the left side of the uterus, and that the interior needed curretting. The curretting he first performed, and while the patient

was under ether he made a thorough examination with a view to ascertain the nature of the growth to the left of the uterus. This seemed to be in the broad ligament, and as the idea of tubal fœtation presenting itself he advised an immediate operation for its removal. One week later the patient was again put under ether and the abdomen opened. A large mass was noticed coming up on the left side, which shoved the uterus to the right. It was of a dark bluish color, hard in parts, while in other parts it had the feel of a cyst filled with fluid. The segmoid flexure of the large intestine had become adherent to the tumour which it completely encircled, and entered the pelvis by the right instead of the left side. The ovary was not distinguishable but was part of the tumour mass. The mass was removed and the patient has done very well, and is now almost convalescent. The condition here could not be distinguished from a hæmatoma of the ovary, which condition it really was, but, in his opinion, it was likely to be caused by a ruptured tubal pregnancy.

Dr. ARMSTRONG said he had now seen quite a number of extra-uterine fœtations, and his experience was that the clinical history in these cases has been anything but uniform and clear. In none of his cases has he seen that clear clinical history which the text books laid down. There is often no definite history of a skipped menstrual period, no severe pain, no condition of collapse indicating a serious internal hæmorrhage. This indefinite element in the history should always be borne in mind, as many of those cases if neglected will likely go on to a second rupture which must prove fatal. Whenever there is a localized mass on one side of recent occurrence, Dr. Armstrong thought the matter should be closely investigated with a view to exclude extra-uterine fœtation.

Dr. J. C. CAMERON wished to know upon what data Dr. Alloway had based his diagnosis of extra-uterine fœtation?

Dr. ALLOWAY in answer said that the patient had gone three weeks over a menstrual period; when the flow did

commence there was no history of any clots or solid masses being passed, nothing but a constant trickling flow of blood; there was also a history of a sudden acute attack of pelvic inflammation accompanied by a certain degree of collapse—not the collapse due to a large hæmorrhage, but the collapse accompanying shock. This acute inflammatory attack was passed over very lightly at the time, being regarded as some transient alteration in the bowel. But when taken in connection with the missed menstruation, and the mass to the left of the uterus, Dr. Alloway thought there was abundant evidence of extra-uterine pregnancy. The operation moreover confirmed his diagnosis, inasmuch as a hæmatoma of the ovary is a very rare condition, and the failure to find a fœtus proves nothing, since in those cases where we have very early fœtation, no evidence of the embryo proper is found.

Dr. J C. CAMERON believed it to be rare for pregnancy to have existed, for the ovum to have attached itself to, and grown in the tube or uterus without leaving some evidence of the fact behind. Unless one could produce some such evidence, he did not think they were justified in pronouncing and reporting it as a case of extra-uterine pregnancy. The symptoms of inflammation and shock upon which Dr. Alloway lays such stress, are just as fully symptoms of ovarian hæmatoma as of extra-uterine pregnancy.

Dr. ADAMI while admitting that Dr. Cameron's remarks were in some respects well founded, he yet wished to suggest the possibility that after all it might not be so easy to detect fœtation by the microscope. He referred to the recent case reported by Dr. Armstrong in which placental and fœtal tissue were sought for in vain, and in which a diagnosis of extra-uterine pregnancy was arrived at by the finding of a curious little malformed body like a fœtus. Here suppose, which is not unlikely, this fœtus had been lost, or passed out, or absorbed, no evidence would have remained of the abdominal fœtation.

Epithelioma of the Cervix Uteri.—Dr. ALLOWAY next produced a photograph of a case now under his care in the General Hospital. The woman was operated upon about 10 days ago for a malignant growth of the uterus, accompanied by a constant discharge, which had lasted for the past six or eight months. The mass was as large as a child's head at the seventh or eighth month, it filled the whole of the vagina, and protruded without as seen by the photograph. It was quite friable, easily broken down with the fingers, and was of the ordinary cauliflower variety of malignant diseases. It extended up as far as the posterior fornix of the vagina, without greatly implicating the latter's walls; and examination through the vagina showed the broad ligament to be effected. On account of this latter complication the uterus was not removed, but instead a considerable portion of the tumour was cut away, to the great relief of the patient, and before her discharge from the hospital he hoped to remove still more of it. The interest in the case lies in the size and protrusion of the malignant growth.

Dr. ADAMI referring to this case said that from the distinct cauliflower appearance of the mass one would have suspected epithelioma; sections, however, showed it characteristic of carcinoma instead of epithelioma. It is richly cellular, and most probably originated from some of the mucous crypts rather than the epithelium of the cervix.

Blue Colouration of the Urine following the use of Methylene Blue.—Dr. ADAMI exhibited several specimens of urine of a deep bluish green tint, from a patient under the care of Dr. Roddick. She was a Jewess, aged 63, and came complaining of a sore, with swelling, upon the leg. She stated that she was diabetic, and upon bringing a sample of her urine, Dr. Roddick thought that the bottle was not clean, but he was informed by the patient that a physician in New York had been treating her for some "internal trouble," giving her small pills, after which the urine was invariably blue for some time.

The urine was submitted to Dr. G. C. L. Wolf for analysis who reports as follows :—Fluid of a bright bluish green colour : odour of phenol ; acid reaction ; specific gravity 1032 ; urea, 1.15% ; glucose, 5.87% (28.16 grains per ounce). On making an examination to ascertain the nature of the colouring matter, Dr. Wolf found that by treating with strong HCl., the colour was to a great extent discharged ; on treating with chloroform the colour was taken up by the solvent ; silk was unaffected, but cotton, wool, and especially cork wood, were well stained. On examination with the spectroscope, the urine showed a broad band in the red at 70° on Zeiss' scale, when 60° was placed in the first oxyhæmoglobin line. Solutions of various blue dyes with urine were made up and with methylene blue a band was obtained in precisely the same position. The urine showed no bands before and after E., which would lead to a suspicion of Indican colouring matters. The conclusion, therefore, was that the colour of the urine was due to methylene blue, and the assumption followed that this was the drug prescribed by her physician in New York. Dr. Adami stated that Dr. Wolf had called attention to the fact, that as pointed out in a recent number of the *Journal of the Society of Chemical Industry*, if glucose be heated with methylene blue, the colour disappears. He found that upon keeping this blue urine in a sealed tube, it became slowly decolorized. This may be taken as an additional proof, if such were needed after the admirable proof already given by him, that the colouring matter in the diabetic urine was methylene blue.

Stated Meeting, June 15th, 1894.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Carcinoma of the Rectum.—Dr. WILLIAMS reported the case for Dr. Kirkpatrick. Mrs. M., aged 39, admitted to the General Hospital on May 29th. For one year she had suffered from irregularity of the bowels and pain during defecation. For the past two months she had suffered

from persistent diarrhœa, otherwise her general health had been good. Examination revealed a stricture of the rectum, about 2 inches above the anus, impassable to the tip of the little finger, felt smooth and hard, and did not bleed. By vaginal examination the mass could be easily detected. On June 11th, the patient was etherised, and the stricture was incised along the posterior part with a blunt pointed bistoury, and dilated. The bowel was then irrigated with a warm boracic solution, and a large rubber tube wrapped about with iodoform gauze inserted. The patient sank and died nine hours after the operation.

Owing to the smooth fibrous surface of the lower end of the mass, Dr. Kirkpatrick was at first disposed to regard it as a syphilitic stricture. However, after a more thorough examination under ether, especially noting the totally different character of the upper portion of the mass, he was satisfied of its malignant nature.

Dr. ADAMI had found at the autopsy an irregular rent 4 cm. long, in the anterior wall of the rectum through which fluid had passed into Douglas' pouch. The abdominal cavity contained 24 ounces of fluid of a light brown colour. The lower portion of the rectum was thickened and constricted for 5-8 cm of its length, with the mucous surface rough and nodular. The growth extended back towards the sacrum, but did not involve the uterus or bladder. Microscopic examination showed the growth to consist of small round cells and spindle cells, with large amount of connective tissue, infiltrating the mucous and submucous coats lying between bands of muscle fibres and extending to the peritoneum. In places there was considerable destruction of the mucous membrane. The diagnosis was that of schirrus cancer, which is thought to have originated in the submucosa, and spread to neighbouring tissues.

Dr. JAS. BELL—Wished to know if the microscopic appearances in this case were definitely characteristic of carcinoma. Even in case they were, he would be still inclined to doubt its cancerous nature in the face of the

clinical history and physical appearances of the condition. A young woman, only 39 years of age, in good health, with the exception of a diarrhœa which does not appear to have caused much wasting, is not a likely subject for cancer. The only physical sign present was the very marked stricture of the rectum, and when this was laid open no tumour was found surrounding it. The speaker directed the members' attention to the bowel now before them, and pointed out that there was no mass in it, neither had it anything which gave one the characteristic feeling of cancerous infiltration. In the presence of such evidence, contra-indicating cancer, he thought we were not justified in making a diagnosis on the microscopical evidence alone. Such conditions are often the result of syphilis, and are amongst the manifestations of that disease which do not yield to treatment. He had seen four cases of this kind within the past year; two of which he operated upon by excising portions of the bowel. In the first case he excised about four inches, in the second a little less, and in both he was rather surprised and disgusted upon finding after excision how little real infiltration or tumour there was. Before the operation, upon examining the bowel, one got this feeling of stricture and hard infiltration, but after its removal the condition noticed was just like what is seen in this case—no real thickening, no mass or neoplasm. Both of his specimens had been submitted to Dr. Adami, who had not been able to arrive at any satisfactory conclusion, beyond the fact that the specimens were not cancerous and showed evidences of some chronic inflammatory change. A third case died in the hospital with extensive ulcerations throughout the intestines. The fourth case he saw quite recently, and had the characteristic appearances of syphilis about the buttocks and anus. In all these four cases, Dr. Bell expressed himself as convinced that he was dealing with syphilis, although at the time in none of them had he made that diagnosis. The two cases which he operated on last fall, have since done well, which

would not be the case had he been dealing with cancer. His first patient has had a return of the same condition as well as some similar growths about the margin of the anus which have been treated with caustic, etc., but he has not lost flesh, although suffering from diarrhœa with mucous stools, sometimes slight hæmorrhages, and tenesmus. The second case has had no return, and is doing very well.

Angiomata of the Colon.—Dr. WILLIAMS next presented a portion of the descending colon with microscopical sections of some angiomatous growths affecting the same, which were obtained by Dr. Adami at a recent autopsy.

Dr. ADAMI found upon opening the abdomen that the great omentum was collected in a mass beneath the left hypochondrium and was of a grayish turbid appearance. The intestines were somewhat reddened, and showed scattered over the serous surface, especially upon that of the transverse colon, numerous minute ecchymoses. The descending colon was of a deep bluish black colour and had a peculiarly dense feel.

On section there was evidence of inflammation throughout; most marked in the descending colon, commencing at the splenic flexure. At this point a band of adhesions having formed, produced a second flexure, and below this the organ was contracted, with thickened walls, and of a dark congested appearance. In its walls were observed about a dozen brownish bodies, averaging 1.5 cm. in diameter, and projecting from the mucosa, producing a considerable constriction in the gut. On microscopical examination of one of these nodules the mucous membrane was found raised up; the angiomatous growth is in the submucosa and is of the hypertrophic and capillary variety; the muscular coat was drawn in into the centre of the nodule, at the apex of which, hæmorrhages frequently occurred. The surrounding tissue was thickened and contain a quantity of fat.

A Case of Infection by the Bacillus Pyocyaneus.—Dr. WILLIAMS reported the following case.

A child five months old, an inmate of the Montreal Foundling and Infant Nursery, who had previously been well, and nursed by a healthy mother, began without any apparent reason to fail.

For two months he steadily lost weight, became restless and seemed to suffer from abdominal pain. When Dr. Williams saw him he appeared listless and moaned when the abdomen was touched. There was a small group of purple papules on either side of the umbilicus. The abdomen was relaxed and the skin dry. Diarrhœa with greenish stools had been present for some time and there was a slight fever (99°-100°).

These papules increased in number, became of a deeper blue colour, and spread to the chest, shoulders and thighs; the abdominal pain ceased, but the child became worse. The limbs were rather stiff, flexed, the child seldom moved, and cried when the limbs were extended, while they at once became flexed again. Dr. Kenneth Cameron then took charge of the Nursery and noticed that during three days preceding the child's death hæmorrhages occurred from the nose, from between the toes and from abraded papules on the thigh and back. The day before death a slight discharge was noticed from the right ear.

At the autopsy the organs were seen to be pale. Minute petechiae were present in the mucosa of the stomach and intestines, but no hæmorrhages had occurred into these organs. There were two hæmorrhagic infarcts in each kidney and one on the heart.

Cultures prepared on gelatin from the spleen, kidney, liver and blood, and kept at the temperature of the room, gave in seven days the characteristic growth of the bacillus pyocyaneus.

Careful cultivation showed this to be a pure growth, and after various media had been satisfactorily tried, a rabbit was inoculated with 0.5 c.c. of a broth culture.

The animal had diarrhœa and stiffness of the extremities; became comatose and died in forty hours.

On examination, punctate hæmorrhages were found in the mucosa of the stomach and intestines, and the bacillus was found in the various organs and in the intestinal contents and urine.

Microscopic sections of the liver, spleen and kidneys, showed the bacillus in large numbers in the small blood vessels and about the capillaries causing numerous minute thrombi and commencing parenchymatous degeneration.

The case appeared to be of interest, as he had been able to find but three other cases reported of primary infection by the bacillus pyocyaneus alone. These were by Neumann and Ehlers. They all occurred in children and were similar in nearly every respect, except in the character of the eruption, which from the papular form became bullous and pustular, the contents developing in time a blue colour.

There had been a number of cases where the bacillus had been found associated with other micro-organisms, especially in suppurating wounds, erysipelas, etc., and in one instance after enteric fever. But one writer in English, H. C. Ernst, had mentioned finding the bacillus. He records a case where it occurred in the pericardial fluid, associated with the tubercle bacillus, although from its large size and slight modifications in colour production he had considered it another variety of the B. pyocyaneus.

Dr. Williams expressed his sincere thanks to Dr. Adami for his kind assistance in the bacteriological work and in investigating the literature of the subject.

Dr. ADAMI thought this was a singularly interesting case, as it is the first of the kind reported in America. Several cases have occurred in France ; two in Germany, and two in Copenhagen, where the bacillus has been found pathogenic. The attention of pathologists was first directed to this organism by the occurrence from time to time of a blue color in the dressing from suppurating wounds, and which was formerly supposed to be due to the presence and reaction of iodine on starch in the bandages. The investigations, however, of Gessard and others, proved this blue

colour to be due to the growth of a little bacillus, which was so short as to be sometimes mistaken for a micrococus. The blue colour, moreover, was found not to be due to the bacillus itself, but to a secretion produced by the bacillus; and this blue pigment was further shown to be a combination of several pigments, blue, green, and red, all of which have been isolated and given separate names, such as pyocyanine, pyozanthin, etc. Speaking of its pathognomonic qualities, Dr. Adami said that in man it is most commonly found on the surface of wounds, and ordinarily is not virulent enough to cause death. As Dr. Williams mentioned, it is seldom a primary affection, and has heretofore been chiefly regarded as a disagreeable complication, rather than as a disease in itself. Some workers in this field, however, having obtained pure cultures of the bacillus, inoculated rabbits with them, and studied the effects. After large doses the animal suffers from severe diarrhœa and hæmaturia, grows gradually comatose and dies within from 24 to 40 hours. Autopsies reveal hæmorrhages throughout the various organs of the body. When smaller doses are given, the animal emaciates, has a diarrhœa, and dies from a kind of ascending paralysis. It is only the young and very feeble of the human family that seem to be susceptible to general infection from this microbe, such as occurs in the rabbit; and it is of interest to observe that when a case does occur a parallelism between the symptoms in the two animals exists. There is the same diarrhœa, the same weakness or prostration, and the same hæmorrhages both mucous and cutaneous. It is quite possible that such cases are more common among children than is generally supposed.

Dr. KENNETH CAMERON thought that the cutaneous hæmorrhages which occurred between the toes were of interest, as there had been absolutely no injury to account for their appearance; they seemed to be simple extravasations of blood. He regretted very much that neither the blood nor the urine had been examined during life. A case with an almost exactly similar eruption occurred in the nursery

about a year ago, which proved fatal, but the autopsy showed no hæmorrhages of the internal organs. No bacteriological examination had been made.

Dr. REED asked if there was any theory as to how the bacillus had obtained an entry into the body.

Dr. WILLIAMS, in reply to Dr Reed's question, thought that aside from the infection through a wound, the alimentary tract might be the most likely point of entrance, and mentioned a case reported by Oettinger where a young man, 18 years of age, convalescent from typhoid, suddenly developed a fever, with some other symptoms unlike those of the previous illness, and on examining the stools this bacillus was discovered. He recovered.

Mycetoma Pedis—Madura Foot Disease.—Dr. WILLIAMS read for Dr. Kirkpatrick the following report and exhibited the specimen.

Xavier Lecompte, æt 21, a French-Canadian, was born in Montreal, and has always lived here with the exception of five years which he passed in Ontario between the age of twelve and seventeen.

His parents, three brothers and four sisters are living and in fair health. No history of tuberculosis can be obtained.

At the age of eleven, a bluish spot appeared on the inner side of the foot which gradually increased until it became the size of a five cent piece. One day while walking he struck the foot, breaking open the spot, from which a little blood escaped. After this the spot disappeared.

A few months later, what he described as a button of flesh (un bouton de chair), appeared on the sole of the foot between the first and second metatarsals, which was later on removed, leaving a little hole which ultimately healed. Three years later a similer growth appeared on the dorsum of the foot directly opposite to where the other nodule had been on the sole. Two years after he struck the foot with an axe, bruising it severely, and ever since the foot has remained swollen and tender, though he was quite able to

walk until last fall, when the condition became very much aggravated, the nodules appearing all over the foot.

The discharge from these sinuses has always been scanty and of a thin purulent character. He came to the General Hospital where, as the foot seemed useless, it was amputated.

Dr. ADAMI remarked that in the pressure of work he had delayed the examination of the foot until that afternoon when first he heard that it was to be brought before the Society that evening.

On proceeding to examine it he was immediately struck by the resemblance between the general appearance of the amputated foot and that of cases of madura foot. There were the same button like elevations of the skin scattered over the surface, and at their centres the same fine sinuses leading deep down into the interior of the foot, while by pressure upon the buttons there was extanded a thin pus containing characteristic yellowish gray bodies. Upon studying the discharge under the microscope, and again upon examination of sections the structure of these bodies could be clearly made out. They clearly resembled in general appearance the ray fungi of actinomycosis, forming lobate masses of varying size, the larger being easily distinguished by the naked eye, some indeed being as big as small shot. Like actinomyces, the masses showed a radiate arrangement of filaments or clubs all around the periphery, with a central irregular network of filaments; unlike actinomyces the clubs were so large that they could be recognized by the low power of the microscope (Zeiss A), and under the high power there was a marked tendency observed for the clubs to bifurcate. In the sections the masses could be seen surrounded by collections of leucocytes, so loose that unless special precautions were taken, the fungi fell out. These appearances tally entirely with the very full description given by Kanthack in the *Journal of Pathology*, Vol. I. Whether this is a species absolutely identical with the Indian form can only be determined by

comparison of material. The clinical history, and the hurried examination so far made, point on the whole to this being a case of true madura foot, and to the species associated with the disease being one and the same.

Dr. Adami pointed out that as in the previous case so here he had brought before the Society what, to the best of his belief, was the first case of the kind reported in any English speaking country.

The disease of ' madura foot' occurs with fair frequency in certain parts of Hindustan, but outside of India is very rare. A case had, he thought, been reported in Italy, another more recently in Algiers, where Vincent had been able to gain a pure culture of the fungus, another in Germany. The characteristics of the disease, which has been recognised for the last thirty years, are its chronic nature, its limitation to the lower extremities and the development of numerous sinuses. More recently attention has been called by VanDyke Carter and others to the constant presence of peculiar bodies in the discharge. These are either black or yellow, and as already indicated Kanthack has conclusively shown them to be closely allied in structure to the actinomycosis fungus. The disease would seem to be most common in countries where the inhabitants go about barefoot; it was noticeable that though in Canada it is not the habit to do so, the disease in this case was contracted during childhood, that is to say, during the period of frequent barefootedness.

Dr. GORDON CAMPBELL pointed out that in Crocker's work on the Diseases of the Skin there was a reference to a previous case of madura foot reported from America. He did not think that any details were given.

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VACCINATION AND THE VACCINE SUPPLY.

The recent report in an evening paper of two cases where death was said to have occurred after vaccination and to have been attributed to the employment of "bad vaccine," as well as the rumours of other serious results having followed vaccination in this city, brings the subject again before the public and the profession. It may be said at once that the question so fiercely discussed in the past as to whether vaccine protects against smallpox or not, is no longer debatable, and that the substitution of animal virus for the old methods of arm to arm vaccination, and vaccination from the scab, has practically settled the question of the inoculation of syphilis and other constitutional diseases which affect the human race. Tuberculosis, the only disease which, with the most ordinary precautions, might be inoculated from the cow, is now so well understood and so easily recognized by veterinary surgeons, that there is no reasonable risk from that quarter. Beside, and wholly apart from these dangers, which, greatly exaggerated, have been the stock-in trade arguments of anti-vaccinationists agitators in the past, are the infinitely more serious risks arising from the possible contamination of the virus or the vaccination wound with pathogenic bacteria. Indeed, in the case reported, in which the child died of a typical pyæmia, the death, if due to vaccination at all, can only be explained by supposing some such contamination. No thinking physician needs to be told that in addition to healthy animals, in clean stables, and with

hygienic snrroundings, it is absolutely essential that the operations of inoculating the animals and collecting and preserving the virus, should be carried out with the same elaborate precautions as to cleanliness and sterilization of the hands of the operator, the instruments and the parts to be operated upon, that the surgeon finds necessary in major operations or the bacteriologist in the making of cultures. This implies that the medical director of the vaccine institution and his assistants should be skilled bacteriologists and thoroughly familiar with modern surgical methods. Although this is, perhaps, the most important link in the chain, the same principles must be carried out in the distribution of the charged points, and the operation of vaccination itself. There is the gravest reason to fear that neither in the production of the lymph and the charging of the ivory points at the vaccine institutes, the distribution of the same through the health offices, nor in the hands of the majority of the physicians who vaccinate are these precautions observed as they should be. Happily, the rusty, unclean lancet has pretty generally disappeared from the physician's waistcoat pocket, and the ivory point alone is used to make the vaccination wound. Hence the necessity that it should be chemically clean and free from pathogenic bacteria, more especially pus cocci. Again, how many physicians take the trouble to cleanse the hands or wash the part before scarification, or give any instructions as to how the wound should be treated subsequently! We would respectfully suggest that the Provincial Board of Health, which enjoys the confidence of the profession in this province to a degree which is not equalled by any other of our provincial institutions, should take the necessary steps to see that the vaccine supplied from the Quebec vaccine "farm," as it is called, is produced with all necessary precautions and safeguards, and that it is distributed in such a way as to render contamination impossible, and finally that explicit instructions should be issued to every householder, and to every physician, explaining in detail the necessary steps in the operation and the reasons therefor. The verdict of the jury of physicians at the inquest upon the body of the child above referred to, stated

that the vaccine produced at the Quebec vaccine "farm" was *perfect*. In spite of this strong statement, it is the obvious duty of the Provincial Board of Health, under whose control the farm is conducted, to make a thorough investigation of the methods employed in that institution, and to leave no stone unturned to make it as nearly perfect as possible.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The above association will hold its 22nd meeting in Montreal, Sept. 25th to 28th next. The Association was organized in 1872 for the purpose of inaugurating measures for the restriction and prevention of contagious and infectious diseases, and for the diffusion of sanitary knowledge among the people. The growth of the Association and the work it has accomplished more than justify its existence. Its membership has been augmented from year to year until it now constitutes the largest and strongest sanitary body in the world, and embraces in territorial extent the United States, the Dominion of Canada, and the Republic of Mexico. Under the impetus given by its work, state and local boards of health and sanitary associations have been organized, sanitary publications increased, and hygienic knowledge widely and extensively diffused.

Among its members may be found physicians, lawyers, ministers, civil and sanitary engineers, health officers, teachers, plumbers, merchants, etc., in fact every profession and many of the industries are represented in its list of members. The only qualifications required for membership are a good moral character, an interest in hygiene and the endorsement of two members of the Association. Cost of membership, five dollars a year.

The local Committee of Arrangements is at work to insure a large and profitable meeting, and it is to be hoped that the number of Canadians who will join the Association, for this Canadian meeting will compare favourably with what has been done elsewhere.

The railways have reduced their rates to one-fare and one-third, provided certificates of attendance be produced when

leaving Montreal on the return trip. Special blanks, for this purpose, will be furnished on demand. The membership fee is $5.00, which hardly covers the cost of the copy of the proceedings of the convention to which every member is entitled.

An excursion to Grosse Isle Quarantine Station has been arranged by the local committee, leaving on the afternoon of the 28th to return early on the 30th. This will be most attractive, both from a sanitary and scenic point of view, the most interesting part of the Province of Quebec will be seen. For application blanks or further information, address Dr. E. Pelletier, Secretary local Committee of Arrangements, 76 St. Gabriel street, Montreal.

We trust that our readers will do all in their power to make the meeting a success. The membership of the Association has happily prevented it from becoming in any way exclusive or sectional, and all who take an interest in it are welcomed as members. That this has not in any way lessened the prestige of the Society from a scientific point of view, may be inferred from the fact that among the list of past presidents are found the names of Sternberg, Billings, and others who are recognized as leaders in sanitary science, while the name of every American sanitarian of any prominence will be found enrolled among its members.

Canada has been twice honored in the selection of the presidents, Dr. Frederick Montizambert having been elected to that office in 1889, and Dr. E. P. Lachapelle in 1893.

The scientific work of the Association has throughout been of a high order, the majority of the papers read being contributed by practical men, thoroughly familiar with the subjects with which they deal, while some communications, such as the report of the committee on disinfectants, are recognized as standard authorities.

Among the subjects selected for discussion we notice the Pollution of Water Supplies ; The Disposal of Garbage ; Animal Diseases and Animal Food ; The Nomenclature of Diseases ; National Health Legislation ; Causes and Prevention of Infant Mortality ; Prevention of Tuberculosis ; Railway Sanitation ;

The Education of the Young in the Principles of Hygiene ; Inspection of School Children with reference to Eye-sight, and Disinfection of Dwellings after Infectious Diseases.

It has been the rule that a meeting of the Association in any city has resulted in a general awakening to the necessity of the sanitary reforms needed there, and we may hope that the benefits derived from the Montreal meeting of the American Public Health Association will include amongst other things a lowering of the death rate and an improved state of public health.

CANADIAN MEDICAL ASSOCIATION.

Elaborate preparations are being made in St. John, N.B., for the reception of the Canadian Medical Association on August 22nd and 23rd next. The gathering will probably be one of the largest the Association has ever held. From reports that come in from time to time, it is believed that the profession of the Maritime provinces will turn out to a man. From Montreal, Toronto and points further west there will be large delegations.

The following are some of the papers promised :

Cases in Practice—B. J. McKechnie, Nanaimo, B.C.

A Year's Experience in Appendicitis—Jas. Bell, Montreal.

A Case of Tuberculosis of arm of 14 years standing cured by Inoculation with Erysipelas—W. S. Muir, Truro, N.S.

The Treatment of Diseases of the Ovaries and Fallopian Tubes—A. Lapthorn Smith, Montreal.

Intestinal Antisepsis in Typhoid Fever—D. A. Campbell, Halifax, N.S.

The use and abuse of the various cautery agents in the treatment of Nasal Affections—E. A. Kirkpatrick, Halifax, N.S.

The present status of Asthenopia—F. Buller, Montreal.

Eye-strain Headaches—J. H. Morrison, St. John, N.B.

Note on Epilepsy—W. H. Haffie, Halifax, N.S.

Influence of Mind on Disease—J. A. McLeay, Walford, Ont,

Miner's Heart—R. A. H. MacKeen, Cow Bay, Cape Breton, N.S.

Address in Surgery—J. F. Black, Halifax, N.S.; E. A. Praeger, Nanaimo, B.C.

Some Functional Derangements of the Liver—J. E. Graham, Toronto.

Treatment of certain forms of Uterine Hæmorrhage, F. T. Bilby, Port Hope.

Address in Medicine—Wm. Bayard, St. John, N.B.

Ophthalmic and Aural Cases—Stephen Dodge, Halifax, N.S.

Papers will be read in the order in which they are received by the Secretary. It is important that those intending to contribute papers will communicate with the Secretary at an early date.

Obituary.

PROF. GEO. E. FENWICK, M.D.

It is with the profoundest feelings of sorrow and regret that we have to record the death of Prof. Geo. E. Fenwick, which took place on the 26th of June last. He was born in Quebec in 1825, and graduated M.D., C.M., McGill University, 1847. For many years Dr. Fenwick has been a prominent figure in the medical world of Canada, and his reputation as a bold, skilful and scientific surgeon was not confined to Canada alone. The many generations of students who have sat under him, both in college and hospital, and who have always looked upon him as a friend, will receive the news of his death with more than ordinary regret. As a teacher in hospital he markedly impressed his personality on his class and taught them to rely on their own experience and powers of observation, and not on text-books alone. Dr. Fenwick was never the slave of authority, he had a mind of his own and observed independently; what seemed good for him to do he did, not because some one in Germany or England advocated it, but because he himself had practised it and found it of benefit. He never could be trammelled by rules and regulations, and even time was no object to him if he had work to do. It is hard to estimate the value of Dr. Fenwick's services to Canadian surgery. He was the pioneer in many operations and procedures in those pre-antiseptic days, when the difficulties of surgery were so much greater and the obstacles so much more formidable than now-a-days, when every young graduate has the *pruritus operandi*, and thinks that so long as he carries out aseptic precautions nothing can go wrong; when in doubt he always operates, thus often reducing the science of surgery to a mere mechanical trade. Now Dr. Fenwick undertook

and carried through new and formidable procedures when there was everything to lose, and when operations, new ones especially, were looked upon with suspicion and the operator occasionally held up to obloquy. If he thought the patient would be benefited by operation, nothing would deter him from carrying out his plan. His name in this country, at any rate, will always be associated with excision of the knee-joint, and his operation, which he has described in the *International Encyclopedia of Surgery*, and also in a book on "Excision of the Knee-joint," will always be extensively practised. As a lithotomist Dr. Fenwick had great success, his large collectien of calculi, with their histories, in the Museum of the Medical Faculty of McGill University testifies to this. He was renowned for his success in operations on large tumors, especially of the neck, and also for his successful excisions of the rectum. He was an accomplished surgical anatomist, and this was a great aid to him in operations which required careful dissections. The extent of his work can, in some measure, be estimated by turning over the pages of the CANADA MEDICAL JOURNAL and CANADA MEDICAL AND SURGICAL JOURNAL, of both of which journals he was editor, the first in association with Dr. F. W. Campbell. In these journals are numerous valuable contributions from his pen, both in the original and editorial departments. No one who had ever been intimately associated with Dr. Fenwick could help loving him; his kindly face, his sympathetic manner, his willingness to place his knowledge and skill at the service of his younger brethren, his charity for error and his modesty and genuineness, endeared him to all his associates both young and old. The museum of the Medical Faculty of McGill University owes much to Dr. Fenwick, the majority of the specimens in the "bone room" were collected by him. He took infinite trouble to secure "specimens," running risks which others would be unwilling to encounter to obtain them. Everyone who has seen him in the operating room will remember how keen he was to preserve a stone just

removed or bones excised, and how he was ever unhappy whilst they were passing about the class, so fearful was he that they might come to harm.

He held many important positions, having been President of the Canadian Medical Association and Montreal Medico-Chirurgical Society, and also for many years a member of the Council of the College of Physicians and Surgeons of Quebec. For twenty-five years he was connected with the teaching staff of McGill University, two years as Demonstrator of Anatomy, eight years as Professor of Clinical Surgery, and fifteen years as Professor of Surgery. He was probably the oldest volunteer surgeon in Canada, and was connected up to his death with the Montreal Field Battery. Through ill-health Dr. Fenwick resigned his professorship in 1890, and although he did some operating work after that, still he found his strength was not sufficient for the strain of a difficult operation, and for the past two years he did little more than a consulting practice. He developed arterial sclerosis some years ago, and had had several slight cerebral hæmorrhages.

A few days before his death he had a cerebral hæmorrhage with right hemiplagia and aphasia and gradually sank on the afternoon of the 26th of June.

He was one of the last of the surgeons who had obtained his great skill in operating in the school of surgeons of the pre anæsthetic days. He has left an honorable record at the McGill University and the Montreal General Hospital which will not soon be effaced, and his memory will always be green in the hearts of his students and colleagues.

In 1852 he married Miss E. C. De Hertel who survives him, and he leaves one daughter, Mrs. Geo. Massey.

Medical Items.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.—The fourth annual meeting of the American Electro-Therapeutic Association will be held in New York, September 25th, 26th and 27th, at the New York Academy of Medicine.

Members of the medical profession are cordially invited to attend.

AMERICAN ACADEMY OF MEDICINE.—The 19th Annual Meeting of the American Academy of Medicine will be held at Jefferson, N. H., on Wednesday and Thursday, August 29th and 30th, 1894. The greater part of the time is to be devoted to the discussion of certain problems relating to the Medico-social Relations of the Medical Profession to the "Dependent Classes." Any additional information about the meeting may be obtained from Charles McIntire, Secretary, Easton, Pa.

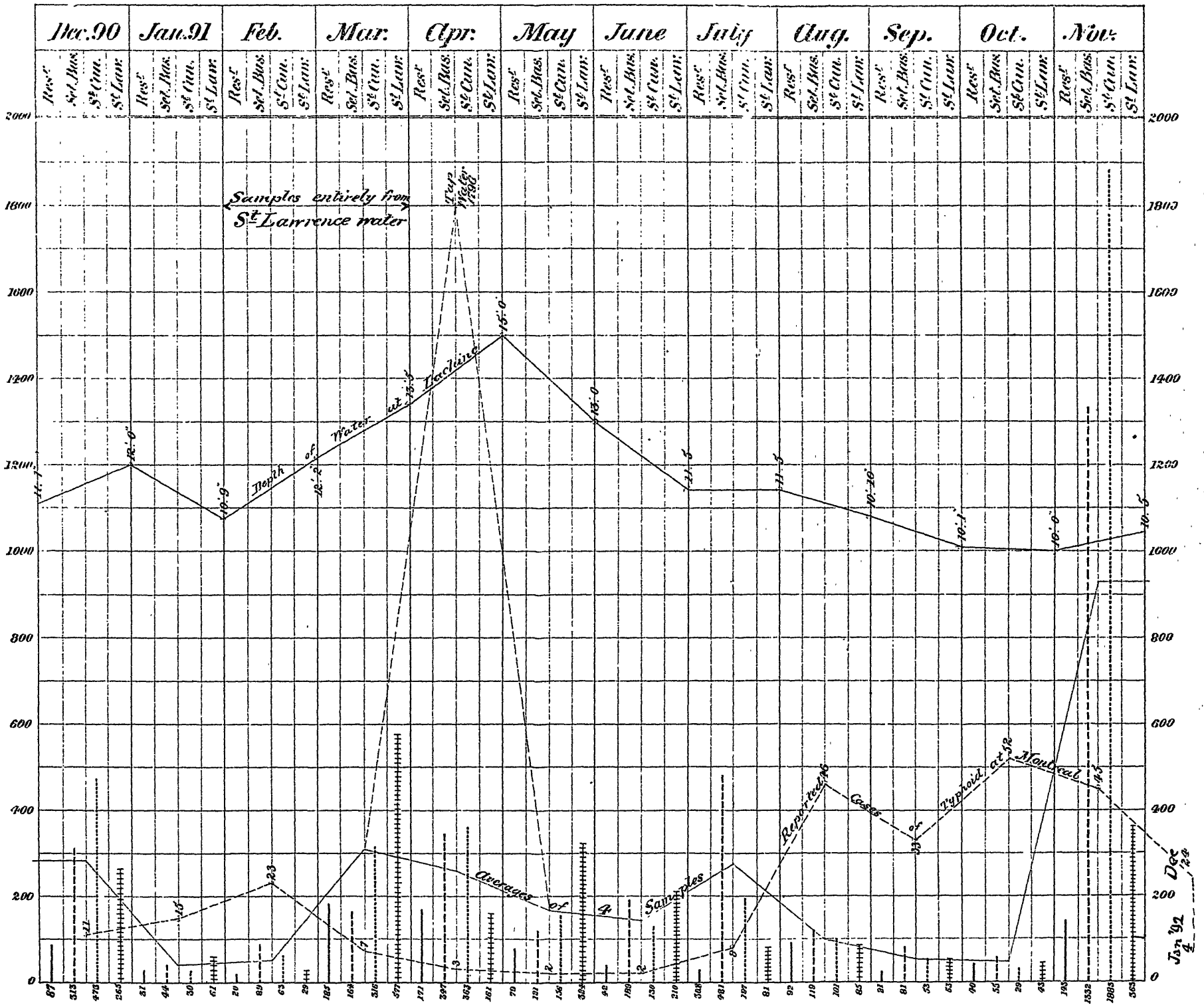

Fig. 6—Diagram showing the results of the monthly examination of water samples.