The Canadian Journal of Medicine and Surgery

A JOURNAL PUBLISHED MONTHLY IN THE INTEREST OF MEDICINE AND SURGERY

VOL. XI. TORONTO, FEBRUARY, 1902. NO. 2.

Original Contributions.

TREATMENT OF LARYNGEAL TUBERCULOSIS.*

BY J. PRICE-BROWN, M.D., TORONTO.

As laryngeal tuberculosis, in a vast majority of instances, is secondary to pulmonary tuberculosis, the systemic treatment is practically the same in each. Hence this branch of the subject having already been thoroughly discussed, I shall confine my remarks to topical treatment, together with a few words upon general, dietetic, and climatic considerations specially bearing upon the throat.

First of all, the voice should be spared as much as possible. Sudden changes of temperature should also be avoided, as well as dusty or irritating atmosphere. The use of tobacco should under any circumstances be limited. Alcohol, when taken at all, should be freely diluted, and rendered bland, to avoid the irritation which it otherwise might produce in the hyper-sensitive mucous membrane.

In reference to diet, it is well known that in this disease deglutition is often very painful, and in advanced cases, sometimes almost impossible. Hence, when irritation exists, all food should be demulcent, or of a soft character, and of a temperature suited to the palate of each individual case.

When ulceration exists, and the tissues are partially necrotic or destroyed, fluids are often difficult to swallow, the tendency for them to enter the imperfectly protected larynx being constantly present. To obviate this tendency, semi-solids or thick demulcent

*Read at a discussion upon Tuberculosis before the Toronto Medical Society, November, 1901.

liquids should be given. The latter are best taken in gulps, like raw unbeaten eggs. Freudenthal has materially lessened the odynphagia and dysphagia in these cases by the free daily administration of large doses of olive oil; the benefit being the result of the continuous lubrication of the diseased mucosa—the swallowing being made easier.

Lake has obtained excellent results also by adopting a modification of the German dish, "Bifteck a la Tartare." Two ounces of raw beef free from fat and gristle are put through a mincing machine, and then intimately mixed with the yolk of an egg. In the worst cases of dysphagia this preparation can often be taken.

Wolfenden has adopted a special method of overcoming this laryngeal difficulty with marked success. He instructs his patient to lie on a couch with the face downwards over the end, the hips being elevated by resting on the knees. The patient then sucks the food from a tumbler through a rubber tube. By this means swallowing can be accomplished, the force of gravitation keeping the food out of the larynx.

In many cases a change of climate for patients suffering from tuberculosis is neither desirable nor possible; but when decided upon, the condition of the larynx and upper air passages should have an important bearing in the selection of the health resort. I laid a good deal of stress upon this point in a paper which I had the honor of reading before this Society eight or nine years ago; and later experience has only confirmed the view then expressed.

As a general rule, it may be laid down that when the laryngeal tuberculosis is purely secondary to pulmonary disease—other things being equal—an elevated region of several thousand feet above the sea offers the best conditions for the arrest of the tuberculosis, owing to the rarity, dryness and purity of the air, and the stimulus which these give to fuller and deeper respiration.

On the other hand, when the tuberculosis has been preceded by laryngeal catarrh, and the disease has first proclaimed itself by hoarseness or soreness in the larynx, an atrophic condition of the upper air passages is often indicated. In such cases, change to an elevated, dry, rarified air can only do injury; while a sojourn in a favorable climate down by the sea, or a prolonged ocean voyage, in properly selected cases may be of the highest benefit.

There are six different conditions which the tuberculous process may assume in the larynx; namely, anemia, hyperemia, infiltration, ulceration, necrosis, and the presence of new formations or growths. It is necessary to mention these, as the treatment varies somewhat according to the form in which the disease presents itself. Several of these conditions may be present in the one case and at the same time.

In *anemia,* the peculiar feature occurs, that while the mucosa of the arytenoids, ventricular bands, and epiglottis may be pallid,

the vocal cords are usually congested. In this condition, and when infiltration is commencing, the best results, in my own experience, have been obtained by spray treatment.

If the nose and pharynx are in an unhealthy condition, these should first be cleansed. Then an alkaline spray downwards, through a curved instrument, will cause the expulsion of the mucus from the trachea and larynx. The second spray, to be used immediately afterwards, should consist of an antiseptic volatile stimulant, dissolved in a bland aseptic medium. For the former, menthol, thymol, creosote, guaiacol are among the most valuable; and for the latter any of the pure hydro-carbon oils, such as albolene, glycolene, petrolene, etc. Of these preparations I have found none so uniformly satisfactory for constant use as menthol in albolene of from one to five per cent. in strength. The immediate subjective effect is a sensation of heat in the larynx, followed by one of coolness and comfort. The objective or observant effect is that the pallid parts are cleansed and vivified, having become more or less pink in color, while the reddened vocal cords have become whiter and less congested, owing to the freer circulation throughout the larynx induced by the treatment. It is reasonable to believe that if this effect can be produced once or several times a day in a weakened and diseased throat, the result should be beneficial.

Other methods of treatment recommended by authors are steam inhalations, medicated by oil of pine, eucalyptus, compound tincture of benzoin, creosote, menthol, etc., etc. And to give ease during the process of inhalation, a few drops of chloroform are sometimes added.

In *hyperemia* we have a condition which occurs much more frequently in tuberculosis of the larynx than is generally supposed. The idea that the laryngeal mucosa in this disease is invariably pale is a mistake, being only approximately true. As Lake says: "There is a great difference between the larynx of a case of chronic phthisis and one of laryngitis tuberculosa in a phthisical patient. In the latter, the efforts of coughing and the irritation of the pathological process will in the majority of instances have set up considerable redness." To this might be added the fact that in acute miliary tuberculosis of the larynx, whether primary or secondary, there is usually considerable congestion.

The treatment in these cases is similar to that required in the anemic condition, with the exception that the sprays or insufflations, used after the first cleansing treatment, should not be of quite so stimulating a character.

In *infiltration* or *tumefaction,* the methods of treatment advocated by different laryngologists vary greatly. Many believe that until ulceration has occurred, operative treatment is never required, save for the relief of acute or chronic stenosis; while

with others, operations of one kind or another are constantly being done.

Shurly has long advocated that linear incisions into the infiltrated tissue, in selected cases, are highly beneficial. They relieve the tension and do what nature herself would do at a later date; at the same time enabling the operator to directly medicate the diseased parts. In this he is supported by Bronner and other writers.

Lake strongly advocates the removal of interarytenoid thickening with cutting forceps, as he puts it, "in almost every case." To use his own words: "In no class of case is the effect of thorough operation more satisfactory than in uncomplicated interarytenoid thickenings or vegetations." He also uses the electro-cautery wire to amputate the whole of the infiltrated epiglottis.

Gougenheim extirpates the arytenoid cartilages, for infiltration of the commissure, with punch forceps, under the belief that the primary cause is perichondritis or necrosis—a severe method of treatment which few laryngologists will be inclined to follow.

For these infiltrations Chappelle, by special instrument, makes submucous injections of creosote, menthol, and oil of wintergreen in castor oil, from which he claims to have had excellent results. Donelan likewise has had recoveries through the agencies of interstitial injections. He inserts a one-minim dose of pure guaiacol into the most prominent part of the swelling, and, like Chappelle, repeats the injections at intervals of about a week.

In *ulceration,* there appears for many years back to have been a general consensus of opinion in favor of the local application of lactic acid, notwithstanding the severe pain which its application produces. The advice is given to first apply a solution of cocaine to the larynx, and then to rub into the ulcer by means of a laryngeal cotton carrier, lactic acid, commencing with a dilution of say 10 per cent.; and gradually increasing the strength from time to time until 80 or 100 per cent. can be borne by the patient. When applied in this way to the ulcerated surface, the pain frequently lasts for many hours (Freudenthal says often from ten to twenty), and often is so terrible that the patients dread the treatment, and will frequently resort to all sorts of excuses to avoid its repetition.

In my own experience, the use of lactic acid in these cases has not been so adverse. This may possibly be owing to a different method of application. I have never used a weaker solution than 25 per cent., and usually the first application has been 50 per cent. instead, increasing from that up to acid of full strength. But, then, I have always considered it inadvisable to use friction. The method has been first to spray the larynx with a one per cent. solution of cocaine. Then to apply directly on a cotton carrier a three to five per cent. solution, soaking the ulcerated surface

pretty freely. Next, a cotton pledget, fairly saturated in the lactic acid solution, is pressed gently upon the ulceration—but without any friction whatever—the patient being instructed to breathe gently and regularly while the application lasts. By this means the lactated cotton can be kept in contact with the diseased surface for many seconds without producing either laryngeal spasm or pain.

The difficulty that I have unfortunately experienced, when attempting friction, is that the sensitive organ, although cocainized, rebelled. Spasm was produced, and by the contraction of the intralaryngeal muscles, the fluid was squeezed out of the cotton sponge, and forced downwards between the vocal cords and into the trachea. Not only so, but the friction of the acid upon the ulcerated surface seemed to aggravate and prolong the suffering, without being counterbalanced by any adequate good.

When applied in the way suggested, the saturation point being limited, a stronger solution can be used, thus compensating for any supposed advantage derived from the friction of a weaker drug.

Of course, as in the treatment of the other conditions already described, the larynx and trachea should be cleansed before applying the cocaine by the free use of an antiseptic alkaline spray.

Lennox Browne recommends the application of a 20 per cent. solution of menthol in olive oil.

Freudenthal has found a menthol-orthoform emulsion of his own device of great benefit in these cases, and free from the pain-producing effect of the lactic acid. In this preparation the orthoform has a fixed ratio of 12 1-2 per cent. while the menthol varies from 1 to 15 per cent., according to the condition and requirements of the patient. He applies the emulsion by injection, using a prior application of powder of saccharated supra-renal gland for its anesthetic effects, thus doing away with the necessity of using cocaine.

In my own experience, what might be called "the progressive use of menthol" has been very beneficial in checking the ulcerative process and reducing infiltration in laryngeal tuberculosis. The anesthetic effect of weak solutions of menthol upon the mucous membranes of the pharynx and larynx is well known. This occurs, although in a minor degree than when using cocaine, without producing the depressing effect incident to the use of the latter drug.

Hence, after cleansing the larynx with an alkaline spray, I throw into it freely with the down curve of an atomizer a 1 per cent. solution of menthol in albolene. This is followed in two or three minutes by a 5 per cent. solution, and if deemed advisable, after an equal interval, by a 10 per cent., or even stronger. The remarkable thing is that the patient will frequently affirm that the

last spray of menthol in albolene, although ten times as strong as the first, does not hurt nearly as much.

Intralaryngeal insufflations of powders, such as iodoform, aristol, europhen, dermatol, pyoctanin, etc., etc., have frequently been used, but they have not met with very wide favor, as from their drying, desiccating character they produce little but discomfort for the patient. They may check the discharge of pathological secretions and hinder elimination.

It is to Krause and Heryng that we are indebted for the use of the curette in the treatment of tubercular ulceration of the larynx. Under cocaine anesthesia, the ulcers are operated upon either with the single or double instrument, the entire ulcer being cut away if possible. This is not, as a rule, attended by much hemorrhage. The application of a solution of adrenalin prior to operation will make the bleeding even less. The rule has been, upon checking the hemorrhage, to apply the diluted lactic acid to the raw surface—the latter to be repeated from time to time during the progress of healing. In many cases, by this method of treatment, the progress of the laryngeal disease is checked, and in some cured.

Still many laryngologists consider the method too heroic and too questionable of ultimate good to be practised except in rare cases. Bryson Delavan has expressed himself on the whole as in favor of milder measures, and Lennox Browne, speaking of the combined curettement and use of lactic acid says: "But the cases must, I think, be rare in which the treatment would be justified by the result."

Gleitsman advises galvano-cautery operations upon the infiltrated posterior commissure, when dyspnea and odynphagia are well marked. I have personally had several opportunities of endorsing his experience upon this point. One advantage of the method of operation over curettement and excision by cutting forceps, etc., is that when properly performed, it does away with all possibility of auto-infection. The main points are (1st) to insure perfect stillness of the larynx while operating; and (2nd) to accurately gauge the extent of the burning incision. The second is but a corollary of the first. The larynx should be thoroughly cocainized, and then during the operation the patient's undivided attention should be devoted to uninterrupted and regular breathing.

Scheppegrell advocates the use of electrolysis or "cupric interstitial cataphoresis," for the disintegration of the tubercular deposit; and has invented a laryngeal electrode to promote the absorption of remedial agents into the diseased tissues.

Necrosis may attack any of the cartilages of the larynx, and frequently the epiglottis is the chief seat of sloughing. Fortunately, however, this condition is rarely attended by severe hemor-

rhage. The tubercular nodules are non-vascular, and being surrounded by epithelial cells, imbedded in a zone of granulation tissue, and this itself surrounded by small-cell infiltration, it can readily be seen that the likelihood of severe hemorrhages is limited. The consequence is that in necrotic conditions spray treatment to cleanse the diseased surfaces and stimulate to a better blood-supply (together with scraping away the dead tissue) is about all that can be done, apart from anodyne applications to relieve pain. Even the scraping may be considered of doubtful value.

When deglutition is very painful, sprays of cocaine or eucaine, or the two combined, are called for. The latter produces less nausea than the former, and the limit of saturation of eucaine being 5 per cent. in aqueous solution, it will probably be the safer one to use.

Further range of surgical measures is somewhat limited. *Papillomatous growths,* the result of progressive ulceration, may require removal by evulsion, snares, escharotics, etc., especially when they occur about the vocal cords or ventricular bands. Occasionally they form without ulceration, and assume the shape of ordinary papillomata with senile base. These, when interfering with respiration or phonation, should be removed.

It is doubtful if intubation can be of any use in laryngeal tuberculosis, as the stenosis is almost always above the vocal cords, upon which the flange of the tube is supposed to rest.

Tracheotomy, too, can rarely be advisable; perhaps only for the relief of impending suffocation; and there are few instances on record in which it has even then prolonged life more than a few days or weeks.

There is one other method of treatment that I have reserved to the last, inasmuch as it applies as well to pulmonary as laryngeal tuberculosis. I refer to the administration of intratracheal injections. In many of the most recent works on laryngology, such as those of Lennox Browne, Kyle, Shurly, Bishop, Price-Brown, etc., if mentioned at all, it is only in the most incidental manner. There have, however, during the present year, been two excellent monographs written upon the subject, the one by Thompson, of Cincinnati, and the other by Anderson, of Detroit. Lake, too, in his new and excellent work on laryngeal phthisis, speaks very favorably of it, and gives an illustration of his own intratracheal syringe devised for administering the injections required. Another surgeon by the name of Thompson, in 1852, and Bing in 1865, are both reported to have used intratracheal injections, with the expectation of curing pulmonary tuberculosis in this way; failing in the effort, the treatment fell at once into disuse. Later it was revived again, and Downie wrote in the *British Medical Journal* favorably upon it nine years ago.

For some months now I have used intratracheal injections for

chronic laryngitis and laryngeal and pulmonary tuberculosis, in a number of cases, with promising results, although it is too soon to place any proper estimate upon the value of the new method of treatment.

The early injections were chiefly aqueous solutions, with the addition of glycerine; and although good results were reported, it was not until oil was substituted for the water that the full beneficial results began to be realized—the oleaginous applications being so much less irritating. Of the various oils that have been used, none seem to suit the conditions so well as the purified hydrocarbons, extracted from crude petroleum. Besides the essential qualifications of blandness and softness, they possess the additional advantage of not being culture mediums.

The most effective medicines for use by the intratracheal method are the same that are used for stimulating sprays—stereoptines like menthol and thymol, and methyl-ethers like creosote and guaiacol, substances that are soluble in oils and that will volatilize slowly at the temperature of the body, the vapor from them reaching not only the larynx, but all parts of the lungs as well. The strength of the solutions should be from 1-2 to 2 per cent.

The writers mentioned claim that from 4 to 8 cubic centimetres of the mentho-camphor solution of 1 or 2 per cent. strength can be injected into the larynx without producing irritation, the larynx being bathed with it, and the whole bronchial tree medicated at the same time. The solution is felt by the patient in the bronchial tubes, and the odor can be detected in the breath of the patient for hours afterwards. In the latter lies one of the essential benefits of the treatment, as in the act of expiration the vaporized drug is brought in direct contact with the diseased laryngeal tissues.

One of the immediate results of the treatment is a warm, pleasant glow felt throughout the lungs, and extending over the entire body, even to the hands and feet. Another is the rapid sensation of cough, the larynx feeling soothed and comfortable, the sensation lasting in some cases for hours.

Menthol may be used of the strength of 1 or 2 per cent.; thymol, 1-2 to 1 per cent.; guaiacol, 1 per cent.; creosote, 1 per cent. A stronger solution of either of the latter would produce pain. Chlorophenol may be used in small doses, say 1 c.c. of 1 per cent. Of any of the others, the dose might be from 4 to 8 c.c. repeated once a day.

Lake is the only one of the writers mentioned who has referred to the matter of temperature. I may say, however, that in every instance that I have used this method, following his suggestion, I have first heated the instrument in warm water, and then filled it with the oil at blood temperature. By the use of the laryngoscope, the tip of the instrument was then guided over the epiglottis, and the patient instructed to inhale slowly while the stream was

poured into the larynx. Up to the present I have confined my own treatment in this line to the injection of 1 to 2 per cent. of menthol in albolene, the amount injected varying from 4 to 8 c.c. repeated every one or two days.

It is worthy of note that when thus given, and without using cocaine at all, the patients could scarcely feel the entrance of the fluid; but toward the latter part of the inhalation, the contact of the oil within the bronchial tubes would produce a slight cough, though only of slight duration.

So far, every patient that I have treated in this way, whether suffering from chronic bronchitis or tuberculosis, has expressed satisfaction with the new method of treatment.

CHRONIC ULCERATION OF STOMACH SIMULATING CANCEROUS DISEASE—RELATION OF A CASE OF GASTROENTEROSTOMY WITH MURPHY BUTTON—RECOVERY.

BY JAMES F. W. ROSS, M.D., TORONTO, ONT.,

AND

E. B. O'REILLY, M.D., HAMILTON, ONT.

In the short paper presented an effort will be made to impress upon the profession the fact that even after the abdomen has been opened it is difficult, if not impossible, to make a differential diagnosis between chronic ulceration and cancerous disease of the stomach. Our methods of diagnosis are very faulty and insufficient. Early diagnosis in either of these conditions is as yet almost out of the question.

Fagge says; "A case in which well-marked symptoms have existed for eighteen months, or longer, may generally be pronounced to be one of simple ulcer of the stomach, and not a case of malignant disease. On the other hand, cancer of the stomach may, for the most part, be diagnosed whenever the characteristic tumor is discovered accompanying the usual symptoms met with in these cases. Cases of simple ulcer affecting the pylorus have now been placed on record, in which this part has been so thickened and indurated that the presence of a scirrhous mass has been simulated."

Miss D. W., aged 28. From the patient's own statement it appears that she consulted a doctor regarding the condition of her stomach, with which she had been troubled for about three years. At times she felt perfectly well, and then again suffered from considerable discomfort after eating food. This discomfort frequently ended in vomiting. The vomited material was very sour and had an unpleasant odor. She found that raw fruits and any acids disagreed with her. She craved for sweet things. Her skin felt dry; the bowels were constipated. She entered the training-school of a hospital in April, 1899, and the gastric condition grew worse.

In August, 1899, she found it necessary to go home. She was then treated until December, but without benefit, in fact she seemed to be steadily growing worse. The abdomen became distended and pains set in in the back, and there was a great deal of soreness about the waist. Shortness of breath came on, and she found it necessary to sit up in order to get her breath. The pa-

tient then came under the care of Dr. E. B. O'Reilly, Hamilton, Ontario, whose notes are now given.

"The patient first came under observation in December, 1899. It was found that she had been, for some months, under treatment for dyspepsia. She was emaciated, and complained of suffering and pain whenever food was taken. Opium had been administered to relieve the pain, and the opium habit was already formed. Physical examination revealed nothing. Food was peptonized. In spite of this and the careful medication the symptoms again became aggravated.

"In January, 1900, after consultation with Dr. Griffin, the patient was sent to the Hamilton Hospital. Efforts were made to prevent fermentation of the stomach contents; rectal alimentation was persevered in with considerable benefit. The pain subsided and the patient gradually gained in weight. On March 24th, 1900, she was discharged from the hospital, and remained fairly well for two weeks, but as soon as food was passed into the stomach the symptoms again became aggravated, the pain returned, and the flatulence and nausea became troublesome. Great rigidity of the right rectus muscle was noticed. There were several profuse hemorrhages from the stomach and bowels. Exploratory incision was strongly urged. There were five severe hemorrhages in all.

"In April the patient grew worse daily. About the middle of May, 1900, as Dr. Ross was in town, I asked him to see the case with me. He also advised exploratory operation. The urinalysis showed the urine to be pale in color; sp. gr. 1.018; alkaline reaction; no sugar or albumen; slight mucoid sediment, with a few pus cells."

Dr. Ross' notes are as follows: "The patient was found, in May, 1900, extremely emaciated, rigidity of the right rectus muscle was noticed, and an indefinite thickening could be felt in the epigastric region. As the patient was only twenty-eight years of age, and as malignant disease of the stomach is rather rare at this period of life, there appeared to be good ground for hesitating before making an exact diagnosis. Diagnosis of ulcer of the stomach had been made when the patient was in the Hamilton Hospital in January.

"The symptoms pointed to obstruction of the pyloric end of the stomach, and it was not possible to say whether this obstruction was due to the presence of cancerous growth or to some other cause. The symptoms had extended over such a period that they pointed to the presence of an ulcer, but the thickening that could be distinctly made out led to the belief that, in all probability, malignant disease had been grafted on to the former condition of ulceration.

"There was no history of cancerous disease in the family.

Some dilatation of the stomach could be made out, but there was not the enormous dilatation so frequently found in cases of cancerous obstruction of the pylorus. The rhythmic muscle waves, so characteristic of pyloric obstruction, were not observed."

On the 5th of June, 1900, operation was performed by Dr. Ross, assisted by Dr. White. The abdomen was opened above the umbilicus and the stomach drawn out. A large growth was found at the pyloric end. The perigastric lymphatic glands were enlarged and the whole stomach wall looked exactly as it does in cases of cancer. The case was looked upon as hopeless, and a decision was arrived at not to attempt to remove the growth, but to give temporary relief by means of a gastroenterostomy.

The operation was rapidly performed by means of a large Murphy button and an anastomosis effected between the stomach and duodenum. The patient was not in a good condition owing to the previous starvation. The operation had to be performed rapidly to prevent collapse. Great care was taken, however, notwithstanding the necessity for haste, to carefully supply supporting sutures to prevent leakage. After the operation there was not much elevation of temperature or pulse. Patient made an uninterrupted convalescence.

On the 2nd of May, 1901, eleven months after operation, the patient weighed 140 pounds, looked the picture of health, and was just returning to complete her training as a nurse. On examination of the abdomen no mass could be felt. The patient was not suffering from any gastric symptoms.

Fagge says further: "That even when the symptoms point clearly to the existence of serious organic disease of the stomach there always remains the question whether this disease is simple chronic ulcer or cancer. Between these affections the diagnosis is often perfectly easy." And he might have added that it is sometimes extremely difficult.

In the case recorded there was no perforation with the formation of abscess cavity, such as is occasionally found to simulate cancer very closely.

An extremely interesting case is recorded by Sidney Martin and Bilton Pollard, of hour-glass contraction of the stomach with pyloric stenosis. This case helps to throw considerable light on the condition under discussion. The stomach was completely divided so that there was a larger right pouch and a somewhat smaller left pouch, formed as a consequence of the constriction across from the greater to the lesser curvature about its middle. A careful examination, *post mortem,* showed the presence of a chronic ulcer at the hour-glass constriction that apparently had excited persistent contraction of the circular muscular fibres, and led, with the formation of fibrous tissue, to permanent stricture similar to those strictures of the rectum produced by small ulcers.

The pyloric stenosis that was also present seemed to result from the presence of a small duodenal ulcer with perforation, and the consequent formation of a small abscess and a large amount of cicatricial tissue between the pylorus, the duodenum, and the transverse colon. The symptoms in this case lasted over a period of ten years.

In the case of Miss D. W. the stomach was drawn out and was not adherent.

In a very interesting article, Moynahan says: "The induration in some cases of ulcer may be of such density that the appearance and characteristics of the malignant growth may be mimicked with remarkable intensity. In one case of my own, which I submitted to the operation of gastroenterostomy, believing the pyloric mass to be malignant and not removable, the patient gained so rapidly in health, and has so stoutly maintained his improvement for a period extending over two years, that I am skeptical as to the accuracy of my diagnosis."

Thayer, Hirsch, Lindstrom, Kammerer and others have mentioned examples precisely similar, and Mayo Robson has recorded a case of pylorectomy for supposed malignant disease which, on minute examination, proved to be chronic inflammatory thickening.

In an interesting article by Satterthwaite, a description of the ulcers is given. He says: "A large number of gastric ulcers have rounded contour, sharply cut edges, surrounded by a zone of tough fibrous tissue. A puckering of the gastric walls about them is present, and bands of fibrous tissue radiate outwards."

This variety has been called the acute. In contradistinction to this is the chronic variety, which has greatly infiltrated walls and ragged, shelving edges, forming a sort of inverted cone, the apex being at the peritoneal covering of the stomach. When exposed to the eye there can scarcely be much mistaking such an ulcer, though it might be taken for a cancer or sarcoma. A microscopic section of such a mass might be taken for a round-celled sarcoma, because in both sarcoma and gastric ulcer there is a great similarity of the character of the round cells. But, if the non-malignant ulcer is brought into view the peculiar excavated centre should indicate its true character."

Satterthwaite's observation in this connection may be quite correct, but it must be difficult for a surgeon to get such a view at the time of operation unless a very large opening is made into the stomach wall.

Symptoms.—The ordinary symptoms of ulcer of the stomach are localized pain after eating, vomiting, hematemesis or melena, or both.

Pain.—The pain at first is often only an epigastric distress. Later on it becomes of a boring character, going through to the

back. When the stomach is empty there is little, if any, actual pain, but when filled with food there is apt to be some immediate distress, and after a couple of hours pain increases and is no doubt due to increased acidity from the pouring out of hydrochloric acid. The patient often obtains relief after vomiting, or after the food has been carried on through the pyloric end.

In many cases hematemesis is the first sign of gastric ulcer. It must be remembered that hematemesis may occasionally be fatal, apart altogether from the presence of gastric ulcer or gastric cancer, in such cases arising from chronic alcoholism and cirrhosis of the liver.

Many cases of perforation of gastric ulcer are on record, in which none of the symptoms of the condition were present previous to the sudden onset of the symptoms of perforation.

Dr. Soltau Fenwick thinks that anemia, with progressive emaciation and great loathing for food, with signs of subacute gastritis, are generally suggestive, at an early period, of cancer of the stomach. He says that in 100 cases of carcinoma of the stomach 60 affected the pyloric end, 30 the walls, and 10 the cardiac end. Pain was present in 90 per cent. of the cases. It was generally constant and scarcely relieved by vomiting, and was very liable to severe exacerbations. The vomiting varied a great deal with the seat of the disease. Hematemesis was usually slight and repeated melena rare. In physical examination auscultatory percussion was especially valuable.

Diagnosis.—The period of greatest frequency of ulcer is from the ages of twenty to thirty years. There can be no doubt that cancer of the stomach is met with at an early age. The age of the patient cannot, therefore, be considered as of much assistance in making a diagnosis.

In the differential diagnosis of these cases but little advance has been made, as has already been stated. All that can be said regarding the absence of hydrochloric acid is that it makes us suspicious of cancer. Hydrochloric acid is found sometimes in excess in cases of gastric ulcer. Lactic acid only appears late, and as a consequence of pyloric obstruction.

The greatest aid to early diagnosis is exploratory incision. Kocher advocates a more extensive use of the exploratory incision in doubtful cases of gastric diseases. He says that he has often regretted the delay in operating, but has never regretted doing the operation itself. He considers that the indications for operation in simple ulcer are repeated hemorrhages, even if small, especially if dilatation of the stomach is present; secondly, for violent pain and for frequent vomiting, when caused by retention from pyloric obstruction; thirdly, for perforation; and fourthly, for the possibility of the condition being not simple, but cancerous.

It would be well to add "for the possibility of the condition

being not cancerous but simple." Surely this is a more important indication for operative interference.

Guinard holds that, under two conditions, exploratory operation is justifiable: first, when there is distinct modification of gastric chemistry, especially apepsia and the presence of lactic acid after a test-meal; and, secondly, complete failure after careful dietary and medical treatment to keep up the weight of the patient's body to its normal standard, or to restore lost weight.

The indication for operation, given by some, is that it should be performed in the absence of hydrochloric acid when lactic acid is present, and when there is reduction in the amount of albumen digested.

It seems to be apparent that before long the practice will be to perform an exploratory operation in all cases of doubtful stomach affections.

Operation.—Chronic ulcers, with thickening simulating malignant disease, are cured by a simple gastroenterostomy. The removal of cancerous growths is a very formidable procedure, and not a very satisfactory one. To be satisfactory it must be performed very early in the disease before lymphatic infection has taken place.

Barling condemns the proposal to excise gastric ulcer which has not perforated.

Kuster opened the stomach in two cases and applied the actual cautery to the ulcer, and then performed gastroenterostomy. The performance of gastroenterostomy, without the application of the cautery, would no doubt have been sufficient to effect a cure. His operations were performed for what I have described as the acute ulcer, and not for the form under consideration, chronic ulcer with tumor mass. The excision of such a mass is an unjustifiable procedure.

It would be well to attempt to cure this simple acute ulcer by plication of the stomach wall. In this way the irritation of the food would cease to be a factor, and the ulcer would be given an opportunity to heal. The operation would be an extremely simple one, and would be accompanied by very little danger.

After Results of Gastroenterostomy.

After gastroenterostomy the stomach, if previously largely dilated, reduces in size in a very short time. There may be difficulty produced by a narrowing of the new orifice, but if the operation is properly performed this is not likely to occur. As a consequence of the operation both bile and pancreatic juice must find their way into the stomach, but they evidently do no harm.

Pyloric spasm is produced as a consequence of the presence of a gastric ulcer. After gastroenterostomy the hyperacidity of the stomach disappears, and the ulcer heals as a consequence of the rest obtained by the organ and the cessation of the spasm.

VACCINAL PROTECTION AGAINST SMALL-POX.*

BY P. H. BRYCE, M.A., M.D., TORONTO.

ALTHOUGH the practice of vaccination against small-pox has existed for a century, it may be said with truth that never, since it was formally accepted by the profession, has there been so much expressed scepticism as to-day on the part of the laity with regard to its protective qualities, and never a time when the profession has been so indifferent as to impressing the necessity for its proper performance upon the public.

From references in the journals of other countries, it would appear that Ontario is not alone in this particular, and we may hence naturally inquire into the reason for this. The first and most potent cause is the marvellous reduction in the mortality caused by the disease in civilized countries. For instance, the London, Eng., Health Report for 1899 gives a table to show the reduced rate since 1838. From it I take the following :

	Population.	Total Deaths.	Rate per Million.
1838	1,768,169	3,817	2,161
1848	2,244,837	1,620	722
1858	2,680,700	242	90
1868	3,131,160	597	191
1871	....	7,912	2,421
1878	3,652,837	1,417	387
1888	4,095,374	9	2
1898	4,504,766	1	0.2

As there had been in London since 1885 but four hundred and sixty-six deaths, it may be said that the disease as an epidemic has practically disappeared, while in Ontario between 1889 and 1898, there were but twenty-two recorded deaths from the disease. It will be remembered that the Montreal epidemic was in 1885. While it is true that public health work in the different countries has greatly developed within this period, in which the germ theory of disease has become a practical working hypothesis in every field of medicine, yet the fact stands that it would seem to be this very fact, associated with that already given, which explains why the public have been looking askance at the practice of vaccination. They have learned enough of the germ theory of disease to know that in vaccination we propose to insert the germ of a specific disease, and have casually learned that with it we may insert some other germ or germs which they have heard of, and which they have also learned may occasion serious results. And the profes-

*Read before the Ontario Medical Association, Toronto, June, 1901.

sion, many of whose members have never seen small-pox, but know enough about pyemia and septicemia, have travelled along the lines of least resistance, like the model politician, till they have either become sceptical as to the virtue of vaccination, or have desired to apply a *placebo* by a lymph without virulence, and then only by one insertion. Apropos of this, Dr. E. Hart in Allbutt's "System of Medicine" says: "So long as medical men in their mistaken good nature are found ready to yield to the ignorance or vanity of applicants for vaccination, and to make only one, or perhaps two, insignificant insertions of lymph into a child's arm, and to certify cases of that kind successfully vaccinated, so long shall we have to struggle against the fallacies and sophistries of anti-vaccinators. Better far let such applicants depart with their children unvaccinated than place them in a state of false security, and at the same time endanger the practice of one of the greatest prophylactics of modern times."

I would say that I believe that every older practitioner present will with me subscribe to this opinion, and it is with a view to arousing anew the interest in this at once the first and greatest of our discoveries in the biological field of immunity, that I have prepared this paper.

The question of protective vaccination against small-pox has two parts—that of the art of vaccination and the quality of the lymph. Briefly, then, regarding the art of vaccination: All are aware that since that most virulent of modern epidemics in England, and indeed all the world, in 1871-74, the Public Vaccination Act made the appointment of public vaccinators and vaccination stations compulsory on the part of municipalities, while every student, on graduation, was required to present a certificate of having been taught and having practised the art. To-day this practice not only exists in England, but the Local Government Board have further an organized department known as "The National Vaccination Establishment," with eleven Educational Vaccination Stations in London, and eighteen in other parts of the kingdom. These stations are utilized for educating those medical practitioners who would qualify as Public Vaccinators, and municipalities cannot employ as Public Vaccinator any one without a special certificate so obtained. The last report states that 47,097 applications for vaccine by Public Vaccinators were received, and 499,281 capillary tubes were sent out from the Animal Vaccine Station in London. Referring to the few vaccinations performed at the Central Vaccine Station, the report states there were 2,615 primary vaccinations, five separate insertions being made in each case. All but 149 succeeded at the first attempt. Of 966 primarily vaccinated from calf to arm, eight did not return, and of the rest, or, 958, 825 had taken in five places, 45 in four, 28 in three, 19 in two, 15 in one place, and 26 failed on

the first attempt. The aggregate insertion success was 92.7 per cent. Students vaccinated 14 cases, of which 11 took in five places, 1 in four, and two failed at the first attempt, the rate of success being 84.3 per cent. To complete this brief reference, 1,634 vaccinations were done with glycerinated calf lymph by the directors of the station; of these 17 did not return, and of 1,617 returning, 1,029 had taken in five places, 179 in four, 103 in three, 81 in two, 104 in one, and 121 failed in the first attempt, or the insertion rate of success was 79.6 per cent.; that is a difference between calf-to-arm and glycerinated lymph of 13.1 per cent. of 941 revaccinations, all calf-to-arm; the insertion success was 93.8 per cent., or 1 per cent. greater than in primary vaccinations. I have quoted thus particularly from the 1899-1900 Report both to save repetition, and to illustrate how the oldest public vaccination work is performed at the end of a century, and to indicate what the official practice is to-day, in order that those who have continued to practise what was taught before the bacteriology of vaccination was understood may be confirmed in their belief, and further, that the younger members of the profession, who have never seen small-pox, or may never have had vaccination taught them or seen it practised, may understand what the best practice is.

The necessity for these remarks must be my excuse for making them before this audience, since during the past two years the public health service has had to face a very general introduction of small-pox into the Province, and has had to deal anew with the problem of vaccination, which, owing to the inertia of the profession, the indifference of the people, and the parsimony of municipalities, had practically become an unpractised art.

It is now proper that we should refer briefly to the quality of the lymph to be used in vaccination. All are aware of the discussions which for years went on as to whether variola was in man the same disease which, as vaccinia, was known in bovines. To-day, both experiment and the theory of immunity seem to have settled the question in the affirmative, and hence we may conclude that as we have variations in type of variola, so we may have variations in type of vaccinia. Further, just as we have observed that a mild type of some contagious disease has left the patient less immune to the same disease, *e.g.*, measles, so we may assume that a mild type of variola, as has existed during the past two years, will prove less protective than one more severe. Similarly, we ought to conclude that as persons who have had small-pox in early years have in some instances been vaccinated successfully, so we may conclude that active vaccine will be to some extent successful within a relatively short period after mild variola. We have both from analogy and experience reason, then, to conclude that vaccination, to be protective, must not only be inoculated at a number of points in order to produce a normal protection, but also that

the lymph must have a normal virulence. Do lymphs in our experience vary in virulence, or is it only the presence of microbes making a symbiosis possible which makes the difference? I have no doubt that we have both conditions in practice. Let us inquire into the phenomena of vaccination. Assuming a properly cleansed arm has had one or more insertions made through the epidermis, we have locally a temporary irritation with inflammation, which soon disappears. In normal vaccination, we find on the third or fourth day an inflamed point appears. The capillaries of the part become engorged with blood, leucocytes accumulate on them. Minute organisms, the assumed germs of vaccinia, are also present in the blood serum and enclosed within leucocytes. The surrounding tissues respond, and much cell proliferation takes place, which as the disease progresses breaks down into granular fragments. More leucocytes are brought to the part, more cell proliferation, more infiltration of the tissues, and more swelling of the part takes place in the struggle to overcome the invasion of the microbes of the disease. As in all other inoculation experiments, we see the same three factors determining the issue: (*a*) dose of the virus; (*b*) the activity of the virus; (*c*) the resistance of the tissues. Lessen the dose, as the number of insertions, or their extent and depth, inoculate with a virus attenuated by age, heat, or natural mildness, and assume an average bactericidal activity of the blood serum and tissue cells, and the inoculation becomes a failure. Reverse the conditions, and introduce with a normal virus some forms, as a staphylococcus, whose staphylotoxins act as hemolysins and destroyers of leucocytes, and the invasion of a normal lymph is assured.

Now, in practice we find that, in different instances, any of these several conditions may exist; and what we seek in normal vaccination is the *juste milieu,* a happy medium of the several factors. For instance, we do not vaccinate, except under exposure to small-pox, a delicate child with but little resisting power to disease, and, if we must vaccinate, will make smaller and fewer insertions. We must, however, in order to obtain normal results in an average person, inoculate with three or four or five insertions. Moreover, we must seek for a lymph normal in strength, not attenuated by age or heat, but not loaded with microbes, tending unduly to assist in the local breaking down of tissue. That such conditions are all readily obtainable is shown by the experience of many, and by the report of the National Vaccine Establishment, already referred to. Of the 2,615 vaccinations there performed, 25 cases showed some abnormal course of their vaccination. "In 21 of these the abnormality was sore arm, in many cases caused by domestic maltreatment; two cases were of transient eruption, and two were reported to be erysipelas on the 15th and 11th days after inoculation." The problem, therefore, which apart

from proper surgery, the profession wishes solved, is one of being supplied with a lymph which fulfils normal requirements.

When bovine lymph was first introduced, producers advertised freely the peculiar virtues of their own vaccine owing to the stock or source whence it came, and all will remember Martin's famous Beaugency brand. To-day, however, it will appear evident to us that, as with their many environments, affecting microbes, being understood, so we would expect that vaccines sent out from different producers will tend to vary, if left to themselves, and not carefully studied and tested. For instance, in the English Government Report referred to, it is stated that the hot, dry weather of summer acted prejudicially on the lymph, first through storage, and second through its effects on the calves. The vesicles tended to run a very rapid course, because dry and aborted with small yields of lymph and of variable quality. Further, the poor pasturage affected the calves, and even in the autumn those thin and in poor health responded feebly, some entirely refusing to yield vesicles—due most probably to inert lymph inoculations.

On this continent, as we all know, the production of vaccine lymph is almost wholly in the hands of private manufacturers, and there is therefore no standard of vaccine lymph. Some of the larger firms have equipped their places with every known means for supplying pure lymph; healthy calves, tested for tuberculosis, are placed in well-ventilated stables, cleansed to the highest degree. In one which I am acquainted with, asepsis would seem to be practically complete. After careful preparation of the calf with antiseptic washing, and shaving, the insertions are made and the wound dressed with a paste, and afterwards dressed with aseptic absorbent gauze. On the fourth or fifth day the lymph pulp is taken into sterilized vessels and immediately treated with four to six times its volume of 50 per cent. neutral glycerine, which it is asserted, and has been proved in England, France and Germany, will practically remove every extraneous organism within a month. That a virus of a normal strength remains may be accepted on the statement of many vaccinators, but especially may we accept the words of Dr. S. Moncton Copeman, who for ten years has had special charge of this work in the National Vaccine Establishment of England. He says: "In glycerinized calf lymph, properly produced, we have then a preparation which, while even more efficient as vaccine than the original lymph, can be produced entirely free from the 'extraneous' organisms, which at one time or another have been isolated from fresh or stored lymph, which is taken at the fourth day from the calf and immediately treated and stored for future use. All this seems so very simple that it would at first sight appear that the product would always be practically normal, and that any vaccine so prepared would produce successful results."

Unfortunately, as many of us have experienced during the past two years, this is far from being the case. It has been my lot to meet practitioners in many parts of the country, and no question is so common as, "What vaccine do you prefer?" Now, I know of some seven distinct firms whose vaccines are sold in this Province, and I regret to say that I have found, with those using vaccine, that varying results are often obtained, not only from different lymphs, but the lymph got from the same firm in different lots, and this has happened at every season of the year. In some there would seem to be a perfectly normal pock on the eighth day, but with an excessive tissue infiltration, while with others there is a delayed activity to the twelfth day or later, a certain superficial inflammatory action, but producing no normal pock, and at times containing even no lymph.

From what has been quoted from the English report, this would seem to correspond with the poor results obtained during the heat of summer from some animals, while the excessive tissue infiltration would seem to be due either to a lymph of high activity or a normal lymph from which "extraneous" microbes have not been eliminated. With regard to the delayed "take," I have again and again shown, experimentally, as have others, that it is not protection against a more active lymph applied within a month afterwards, and I regret to say that in a number of instances such lymph has not proved protective against the mild type of variola which we have encountered during these two years, although seemingly it has modified it considerably in some cases. I may say further that vaccine on points has been sold, prepared as in former years, but without glycerine, that it has proved, at least in cold weather, equally successful with the best glycerinated, and apparently has not during the past season produced any greater tissue infiltration than some glycerinated lymphs. From the standpoint of a public health officer dealing with outbreaks of small-pox, it is apparent that any vaccinator will insist as a primary requisite that his vaccine must be protective as rapidly and as certainly as possible, and hence he will insist that if an exposed person is to be protected up to the fourth day after exposure, it must be an active lymph which matures by the eighth day. Further, it must be a lymph, which, when a school has been vaccinated will produce such a normal pock that for years after the cicatrix is a constant witness to its efficiency. I am quite aware that several firms and their physicians say that vaccinal protection can be got by twelfth-day lymph, and without practically any systemic disturbance or fever. I regret to say that such has not been our experience in Ontario. In the 1900 Philadelphia edition of Levy and Klemperer on "Chinical Bacteriology," we have in the chapter on infection some of the biological reasons for these several anomalies discussed. We have (1) the class and species of the infecting

organism; (2) the general or localized infection; (3) the virulence of the infectious agent, and its decreasing virulence under culture external to the body, or in insusceptible animals, and its increasing virulence by passing through susceptible animals; (4) its greater communicability when virulent, and its increasing virulence with the severity of the disease; (5) the mild nature of the infection, with an increased virulence due to symbiosis; (6) the different portals of infecton; (7) the susceptibility of the infected organism or predisposition, which may be a general or localized predisposition, and (8) secondary infections. As the counterpart of infection he discusses "Immunity," and thereunder discusses attenuation of the contagion by high temperatures, by age, exposure to oxygen, antiseptics, dilutions, and by antitoxins, and then refers to immunity as being only relative and not even conceivably absolute; it is also in general specifically limited, when produced, to a particular germ, as vaccination protecting only against small-pox, and finally he discusses the intra-systemic processes by which immunity is brought about. Now, without entering into the discussion of any of these several modifying influences, I would say that it is more important for us to remember in discussing the practice of vaccination, the action of vaccine, the extent of the infection produced by it, and the degree of its protectiveness, that every one of these factors enters into the problem, and that, while we are not as individuals in a position to govern the conditions which enter into the preparation of vaccines, as now put upon the market, we can do much by careful observation to determine, each for himself, which product gives most constantly a normal and even result; and further, that we can, by realizing the essentially scientific character of the immunizing process we are practising, lend to it all the care which we would in any other surgical operation, and in so doing not only add still greater lustre to the fame of the immortal Jenner, but give yet greater utility to a scientific discovery which has robbed the most terrible disease of a preceding century of its victims, and saved to the family and the State a notable proportion of the population.

IS VACCINATION WHAT IT SHOULD BE?

BY A. J. HARRINGTON, M.D., M.R.C.S. (ENG.), TORONTO.

FOR a number of years I have been thoroughly convinced that vaccination as usually performed by the general practitioner is far from being as carefully carried out as it should be in these stringent aseptic days, and that a certain proportion of the bad results of vaccination is due to carelessness, or probably, to be more precise, indifference on the part of the vaccinator. What I mean by bad results are the introduction into the wound of infective organisms with all its dreadful train of lymphangitis, lymphadenitis and abscess or dermatitis, erysipelas or staphylococcal or streptococcal invasion. Now, this, in my mind, is due (when the practitioner is to blame) to lack of cleanliness in the operation either in improper preparation of the parts before vaccination, by not sterilizing the instrument by which the operation is performed, by not giving the lymph sufficient time to dry, and lastly, by improper treatment of the wound immediately afterwards. Now, you may think I am presuming too far when I make these statements, but I am convinced that a great majority of vaccinations to-day are carried out improperly, and this has, with good reason, put a lot of distrust in the minds of the people which should not be. Is vaccination any different to-day from what it was a century ago? Yes, different to-day to what it was eighteen months ago, although the underlying principles are exactly the same as it was when Jenner originated it and vaccinated his first patient in 1796. It is in the technique that the difference lies, and like all things else has greatly improved, and the quill and ivory point should be laid on the shelf as relics of the past, and glycerinized lymph in hermetically sealed tubes used as it represents the acme of scientific progress. Now, although full instructions are given and the literature of vaccination is constantly flowing into our offices and is as regularly passed on to the waste-basket, yet we go on in the same old groove. The manufacturers take the greatest prophylactic precautions in the preparation of the lymph. The heifers before being vaccinated are examined by a competent veterinary surgeon and tested with tuberculin, and if any evidence of disease is found the animal is rejected. Not only is this the case, but the heifers are then carefully shaved, scrubbed, and the surface of their bodies made sterile before the inoculation takes place, and similar careful manipulation of the animal takes place when abstracting from the cowpox vesicle the lymph which is to be used for vaccination. The pulp of the cowpox is mixed with pure glycerine, and is then put into capillary tubes, each tube holding enough lymph for one vaccination. Now, as the manufacturers use such precautions in getting us the lymph, we should use equally precautionary measures in

transferring the lymph from the tubes to our patients, and it might be as well here to indicate exactly how to do it, although, as I have said, literature is unlimited on this particular subject. The spot that is to be vaccinated should be carefully cleansed with soap and water and then dried. No antiseptics should be applied to the skin at this time. A small area should be scarified with a needle which has been previously sterilized by passing through the flame of an alcohol lamp or a Bunsen burner, and the lymph (always glycerinized lymph in the tube) is applied to the scarified area and thoroughly rubbed in. Do not draw blood if you can possibly avoid it, as a gentle oozing of serum gives much better results. If you draw blood, while it is drying the fibrin of the clot contracting forces the lymph through the serum to the surface as in ordinary coagulation of the blood and the effect of the vaccination is lost, and this is a great cause, to my mind, of the majority of cases where vaccination does not take in persons who have not previously been vaccinated. Now, give plenty of time for the lymph to dry thoroughly, then apply a clean piece of cotton or absorbent cotton over the vaccinated area, and retain it in place with adhesive plaster. This method of vaccination requires much more time than the old way, but the difference in results will well repay the additional care, and sore and swollen arms will be a rarity.

Instruct your patient to come back in a day or two and let you inspect the sore. Remove the dressing and apply a fresh one. Strict surgical cleanliness should be observed in every case in the after dressing. Now, shall I do all this for the fee (which I believe now is a tariff fee)? Yes; the profession regulate what all your fees should be, and your representatives in the Council have decreed what the fees shall be, and you must look on your work as highly philanthropic and a duty to your fellow-being—the same duty which you are told you owe to King Edward when you are summoned to attend police court to give medical testimony and no fee is allowed you. Now, there is another and greater side to this question, and that is, the patient's side, and it is here that that species of monomaniac, commonly known as anti-vaccinationist gets in a few of his digs. Since the world began there has never been anything put forth for the betterment of the human family but has had strenuous opposition by a lot of crack-brained extremists whom neither argument nor demonstration can ever influence, who seem to live solely for the purpose of obstructing everything beneficial, and who rant and rave and in due time die, and, like a bubble, burst and mingle with the fathomless depths and leave no evidence of the fact that they were ever on earth. Not so with the great Jenner, who is greater to-day than he was while here on earth, who did his work solely for the benefit of mankind, whose observations were worked out and demonstrated alone, and we all know what changes have been wrought in this terrible disease which cost over 600,000 lives a year in Europe alone. Jenner

studied the subject minutely and mastered all its details, and gave it gratuitously to the world. He vaccinated all who came to him. He sent out lymphs to the ends of the world, and would have spent all his wealth and become impoverished if parliament had not made him liberal grants. What a noble example of philanthropy! Yet still the cry of the ranter is heard in doleful cadence against vaccination. He in his most lucid intervals cannot, or maybe I should say will not, see the effects of this means of delivery from the greatest scourge that has ever preyed upon the human family. It is remarkable that one of the greatest strongholds of the anti-vaccinationist has been in Gloucester, the home of Jenner. This city has recently had a crack that has torn the masks from the eyes of its citizens. It has suffered an epidemic the like of which has not been experienced by any other town in England. Between 1886 and 1894 the number of public vaccinations had fallen from 1,095 to 34 and in ten years the total was only 2,378, though in that period 15,682 children had been born and only 3,176 died. The epidemic began with a case of smallpox in an unvaccinated child, which was concealed and treated as measles. The end of the epidemic was certainly not due to effective isolation nor to the exhaustion of the virulence of the infection. When the city began to be boycotted the citizens appealed to the city council, the council appealed to the doctors, and the doctors replied that vaccination and revaccination were the necessity of the time. Finally, the Board of Guardians instructed the vaccination officer to carry out the law. More than 36,000 vaccinations were effected. The epidemic was brought under control; 2,036 persons were attacked and 443 died. The Guardians are now prosecuting those who are not vaccinated with energy far greater than that with which they formerly opposed it, and yet the anti-vaccinationist rants and rants and roars, and like a broncho kicks because it is his nature to do so, but with less brains than that animal because a broncho can have sense pounded into him but the other animal cannot. Let us drop comparative anatomy for a moment and return to the patient's side of the question. There are any number of unreasonable people who will lay the blame of sore arms or inflammatory lesions to the doctor or to the vaccine, whereas in nine hundred and ninety-nine cases in every thousand the bad result is due to downright carelessness on the part of the patient or to some direct injury to the sore. You vaccinate a child and instruct the mother to let you examine the arm in a couple of days; two weeks hence she appears with her child with arm swollen from elbow to shoulder or an erysipelatous rash extending widely from the vaccinated spot or probably an abscess forming in axilla. You ask yourself the question, Did I vaccinate this child with the care that I should have? and if you think you have or know you have, you are ready to fight for yourself, and on inquiry you find the child had received a blow on its arm or had in its sleep scratched off the scab and inoculated the sore from its finger nails

Then you should point out to her that it is her own fault, that you instructed her to come to you and she was too careless to do so and she must take the consequences. Other people whose fathers or grandfathers or some ancestor has been kind enough to hand down along the ancestral line some transmissible disease or cachexia, forget that these may be a factor in their children's health, and these afflictions setting in after vaccination, of course the credit is given the vaccine which they claim has been the cause thereof, or more unkindly they will give you the credit of unskilfulness.

How should an ulcerated arm be treated? Exactly in a similar way that you would treat any open wound which is healing by granulation. The belief prevails in the community that a suppurating sore is not an unnatural sequence of successful vaccination and therefore must be patiently borne. The readiness with which proper applications remedy the condition disproves this belief. The best way to treat these ulcerations is to wash the sore (after having removed the scab) and the surrounding skin with alcohol and a solution of nitrate of silver applied over the whole sore of a strength of from one to one and a half drams of nitrate of silver to the ounce of water, until the surface is covered with a thick white layer and a good dusting powder of subiodide or subnitrate of bismuth applied, and the whole covered with gauze and bandage. This can be reapplied in a few days if it be thought necessary, and is indeed a most satisfactory treatment.

Self-vaccination or vaccination of children by parents should be prevented by law, and the physician who takes improper precautions should be held responsible. Another point which is very important is the ages at which vaccination should be performed. On March 16th, 1898, the President of the Local Government Board in London introduced the Vaccination Acts Amendment Bill into the House of Commons, and clause 1 fixes the age limit within which the child shall be vaccinated at twelve months instead of three months as heretofore. This is much more satisfactory, as many children at three months are unfit for vaccination, whereas if the child is beyond the first stages of dentition the possibilities of blaming lymph for transmitted disease as syphilis or tuberculosis is practically done away with. That a revaccination should take place about puberty is now proven beyond doubt, and I can do no better than give the words of the veteran observer, Dr. William W. Walsh, recently stated before the Philadelphia County Medical Society regarding the recent epidemic:

"Not one thus far who has been vaccinated previous to exposure has contracted smallpox. About fifty individuals, including physicians, nurses and attendants, have been continuously and freely exposed to the disease.

"We have, from time to time, received in the hospital persons with well-marked and even fatal smallpox in whom vaccination some weeks before had failed.

"Many physicians hesitate about vaccinating individuals who

are suffering from some other disease. At the Municipal Hospital recently scores of patients suffering from diphtheria and scarlet fever were vaccinated as a precautionary measure. The vaccination did not unfavorably influence the original disease, and, on the other hand, the course of the vaccinia was in no case unusual.

"Since the beginning of the present year, about 300 cases of smallpox have been treated at the hospital. Of this number not a single patient had been recently successfully vaccinated. The shortest period elapsing between a successful vaccination and the contraction of the disease was five years. Whilst the majority of the patients admitted were unvaccinated, a very large number had been vaccinated in infancy.

"I believe that it may be laid down as a rule that if a child is successfully vaccinated in infancy, and again at the age of puberty, the protection will be permanent. The exceptions to this rule, however, may be sufficiently frequent to warrant repetition of the vaccination whenever there is exposure to smallpox."

There is yet another matter which I would like to touch upon, and which, I think, could be easily remedied, and that is the matter of public vaccination, which, I think, is a great injustice to the general practitioner. Of course, I do not know how it affects every practitioner, but I know that during the recent general vaccination by Dr. Sheard and his assistants, at the City Hall, quite a number of my patients applied there and were vaccinated for no other reason than to save the vaccination fee. The parents of several of these children who were vaccinated, are wealthy people. Would it not be as well for the Health Officer to make some inquiry into cases of this nature, and send them back to the family physician to be vaccinated? The examination of individuals employed in large establishments is another very important matter, and is also very imperfect. In these examinations I believe the size of the scar is taken as an indication of successful vaccination. This is a most unreliable test, as the best vaccinations leave the arm very little altered, but always indicated by a scar.

In these examinations if the scar is over seven years old revaccination should be ordered, and even this short period does not always give immunity, as the duration of immunity conferred by vaccination is variable. In the face of an epidemic vaccination of all who have not been vaccinated for six or seven years should be enforced.

That vaccination should be compulsory is warranted by more than a century of experience, and we hope soon to see Acts passed making vaccination compulsory in infancy and revaccination at puberty, and again in the face of an epidemic if the patient has not been vaccinated within seven years of that epidemic. In conclusion, I think every physician should use all the influence he can to urge revaccination in all cases. And to-day, in view of the fact that smallpox is on the increase in the northern part of this province, it is more imperative than ever that the utmost vigor should be put forth to keep down this horrible scourge. A. J. H.

THE SHIP SURGEON.

BY VERNON A. CHAPMAN, M.D.,
Ship Surgeon, SS. *Werkendam.*

THE Greeks and Romans are still at war!
'Twas a noble jousting match.
The field was No. 2 steerage,
Just forward the baggage hatch

(Here comes a confounded stoker,
Interrupting the train o' my thoughts.
If he stoked furnace more and stoked himself less,
He'd have less of pain in his guts.
"Got krämps!" with his hands on his belly,
He groans in bad English and Dutch;
If he stoked furnace more and stoked himself less,
'Twould be better for all, far much.)

The Greeks and Romans are still at war!
Though not fighting at city gates.
The field was No. 2 steerage,
And the weapons were tin dinner-plates.

It seems the Greeks tackled the Romans
("Dagoes" we call them now),
And one of the Greeks stopped a tin dinner-plate
Sailing edgewise, with his left eyebrow.

Well, it only required four stitches
To bring that back to its place;
And it took two more to stop the gore
In the side of a Roman's face.

Three stitches sufficed to re-establish
The fallen Roman nose.
Another Greek had a broken head,
And was minus the seat of his clothes.

Yes, 'twas a noble jousting match,
Though perhaps not now known by that name.
For shields and armor they used tin plates;
Their arms were more of the same.

'Twas viewed by many nations—
Some seventeen I should say;
The steerage cat couldn't stand it—
He sprang up the companionway.

Greek, Russian, Arab,
Turk, Arminian, Maltese—
What in the world will Uncle Sam do
With such "citizens" as these?

Well, well, I'm only the "Dökter";
I can but mend their heads.
'Tis a relief when they are landed,
And I see the smoke o' their burning beds.

Public Health and Hygiene.

. . . IN CHARGE OF . . .

J. J. CASSIDY, M.D., AND E. H. ADAMS, M.D.

FIRST QUARTERLY MEETING OF THE PROVINCIAL BOARD OF HEALTH.

THE first quarterly meeting of the Provincial Board of Health for the current year was held January 8th and 9th, in the office of the Secretary, Parliament Buildings. Dr. Vaux, Chairman, presided. The other members present were: Drs. Cassidy, Kitchen, Oldright, Douglas, McCullough and Bryce.

A letter was read from Dr. McKague, Medical Health Officer at Acton, protesting strongly against the action of Dr. Mavety, M. H. O. at Toronto Junction, in giving a certificate to Mrs. Vance, who was put off the train at the Junction on December 21st, accused of smallpox, and who afterwards developed the disease at Acton, and caused an outbreak at that point. The village of Acton claimed compensation from the Junction for the expense they were put to.

Dr. Bryce, in presenting his report on smallpox, said that, with the exception of a few weeks last summer, smallpox had existed in Ontario during the whole of the year 1901. A total of 1,868 cases had been reported. The largest outbreaks were in the unorganized districts, 750 cases; Carleton County, 237 cases; Kent, 165 cases, and Brant, 125 cases. There had been twelve deaths, or a mortality of about two-thirds of 1 per cent., a record which had been exceeded by several other contagious diseases, which had been prevalent during the year. He referred to the extensive outbreaks in many of the States of the Union, which in most cases had been mild, as in Ontario, but during the last three months of 1901 there had been in Philadelphia alone 1,003 cases and 142 deaths, the mortality there having increased from 3 per cent. in the first nine months to 10 per cent. in the last quarter. In Wisconsin there were 1,010 cases in December and 4,415 cases and 22 deaths in the whole year. In Boston in the last six months the mortality has been 10 per cent. The fact that the disease had become more virulent in many of the United States in the last few months was full of meaning to us.

The epidemic in this Province could be traced to five centres, and was owing largely to the neglect to deal with the outbreak

promptly, due to apparent or real doubt as to the character of the disease they had to deal with. In Northern Ontario particularly the lesson had been learned, and companies employing lumbermen who had been careless or indifferent were now vigilant and were employing camp physicians. The action of the Ottawa authorities, when they were convinced the disease there was smallpox, had been prompt and creditable.

Local boards of health and councils, in addition to the fear of being looked upon as in league with the health officers, were, further, fearful of being wasteful of public funds, if they supplied vaccine and paid public vaccinators. The mildness of the disease and the prompt stamping out of it in the past are principally responsible for these difficulties, since it had been his experience that the great body of the people in the presence of general exposure to smallpox of a severe type, are ready to be protected by vaccination, and indeed are believers in its efficiency, as proved for two hundred years.

He advised compulsory vaccination in those localities where the disease broke out, as in at least thirty instances the disease was confined to the first case.

January 9th the principal proceedings were the Chairman's address, and the report of the Committee on Sewage. Dr. Vaux stated that "the interest which a year ago was manifested in devising plans to find a cure for tuberculosis has naturally during the last few months been overshadowed by the invasion of our country by smallpox; not that we have grown careless about the former disease, but because the latter has suddenly assumed proportions which had forced it on our attention, and because the public are aroused to the danger confronting them.

"There are between four and five hundred cases of the disease in the Province at present, despite the fact that it was thought in August that the epidemic had been stopped. In the last year there was a total of 1,868 cases. Fortunately, the disease had been of a mild type, but none the less fearsome for that."

According to Dr. Bryce, who presented a report on the sewage question to the Board, there were two general ways of dealing with sewage disposal; first, by disposal on sewage farms, and, secondly, by the use of septic tanks. The great trouble found in large cities is in the fact that the sewers have been built in such a way that heavy rainfalls often cause them to flood cellars, owing to their being required to carry away storm water as well as sewage.

Surface drains, or a separate system for the disposal of storm water was suggested. According to the report, half the water carried by the sewers in Toronto is waste water that can be controlled by the use of water meters, which, if done, would effect a saving in the Waterworks Department of a large sum annually.

The report also says: "If, in addition, in the case of Toronto, the amount yearly wasted in dredging the slips were added, it is probable that the sewage disposal works could be carried on without any greater outlay than that wasted to-day in unnecessary pumping. But this is only the beginning of the economy, for if the amount of sewage passing into the sewers were reduced by half, the amount of liquids to be dealt with as sewage would be reduced one-half."

In conclusion, it was suggested that the Board might give some useful advice, backed up by laboratory experiments.

At the afternoon session of the Board Dr. J. J. Cassidy spoke of the cases of poisoning which sometimes occur from canned fish, and suggested that in the interests of the medical profession and of science, the doctors whose attention such cases came under should send a sample of the affected fish to the Government Laboratory in this city for analysis. This suggestion was approved of.

Dr. Cassidy also recommended that the Committee on Contagious Diseases be requested to prepare a leaflet, for the use of local boards of health, dealing with the prevention of tuberculosis. This recommendation was adopted.

The rules which were adopted by the Conference of State and Provincial Boards of Health (American Public Health Association), at the meeting at Niagara Falls, September 13th, 1901, were discussed in Committee of the Whole. They refer to (1) Isolation or quarantine regulations pertaining to communicable diseases; (2) Disinfection during the presence of the disease; (3) Release from isolation or quarantine. The rules, with some amendments, were adopted. The Board then adjourned.

Directions for Subcutaneous Injection of Iodipin.—Dr. Neisser's Kgl. Univ.-Klinik for diseases of the skin at Breslau.—Iodipin containing 25 per cent. of iodine is injected into the gluteal region to the extent of 20c.cm. daily for ten successive days. The preparation should be previously warmed to the body temperature. This average dose of 20c.cm. may be varied as occasion requires. A syringe with wide discharge aperture and a wide canula should be used, because the preparation is difficult to inject on account of its thick syrupy consistence. For convenience of handling, the syringe should have a transverse arm. The canula should be from 5 to 7 cm long, so as to be inserted obliquely under the skin as far as possible, and then the puncture closes better after the canula is withdrawn, and a piece of adherent plaster should be applied to prevent the iodopin oozing out. Intermuscular injections are to be avoided, as they give rise to a sense of tension and much pain. To avoid danger of injecting into a vein, it is advisable after making the puncture to remove the syringe from the canula and wait to see whether blood flows.

Selected Articles.

HEADACHES, THEIR CAUSES AND TREATMENT.

BY L. H. WARNER, A.M., PH.G., M.D., NEW YORK,
Pathologist and Bacteriologist, formerly Bacteriologist to St. Catharine's Hospital.

MIGRAINE at times represents an hereditary predisposition, often accompanies anemia and diseases of the female generative organs. One of its frequent causes is dyspepsia due to chronic gastric catarrh, dilatation of stomach, toxemia, etc.

We often find imperfect digestion of hydro-carbons. Migraine in children is often due to overwork in school. The term migraine covers a wide field of human ailments, and too frequently migraine remedies are resorted to when absolutely not indicated. Migraine is a dulness or depression of spirits caused by disorders of some part of the organism and causing dull pain in one side of the head. The various disorders of the digestive tract or of the female generative organs are mostly the etiological factors of this febrile condition. The milder form of neuralgia is often pronounced migraine.

There are three forms of migraine, simple, ophthalmic, and ophthalmoplegic. Under the first heading come all those cases in which there are hemicrania, nausea, vomiting, and other disturbances more or less severe, commonly known as bilious headache. The ophthalmic form is characterized by scintillating scotomata and may follow on or alternate with the first. It may be accompanied by hemianopsia sensory and motor disturbance.

The third form is characterized by intense headache, much more hemicranial in character than in the other cases, and which rapidly runs into paralysis of the third nerve, occurring on the same side as the pain.

Migraine is considered a disease due to autointoxication, and is very readily caused in some neurasthenic patients by an effort whether mental or physical, however slight. Uremia not uncommonly causes migraine, which is then associated with nausea and vomiting, the complex of symptoms thus simulating a gastric disorder. Migraine frequently begins in early childhood and reaches its height in early adult life, and declines after the meridian of life. It may be distinguished from other forms of headache and neuralgia by its peculiar constitutional and paroxysmal type, by

its aurea or prodromes, and by its gastric disturbances. Imperfect nutrition impairs the blood, and impaired blood prevents the proper distribution of tissue pabulum. The normal activity of a vital tissue (such as the blood) is the only cause that both requires and permits it to use up pabulum. Function and nutrition are in the relation of cause and effect. Function by consuming plasma stimulates nutrition; without it there is no demand for new plasma, hence nutrition grows weaker and weaker and autointoxication follows. Chlorosis is often a strongly predisposing cause of migraine.

In selecting the treatment for Migraine, we must consider prophylactic measures; the avoidance of fatigue, hunger, mental strain, chills, constipation, antisepsis, etc.; advising real rest after meals and a carefully selected diet. The various coal-tar products are more or less employed in the treatment of migraine, but the action of many of them proves too uncertain. J. King Martyn (*British Med. Journal,* 1898, page 807) reports a case of stomatitis following the administration of antipyrin. Kronig (*Berliner Klinische Wochenschrift,* November, 1895) cites cases of phenacetine and acetanilid poisoning. Antipyretics will have untoward effects on skin eruptions, because they are excreted through the skin, and the skin through the pores regulates temperature and hence it is under the control of the central nervous system regulating temperature, and finally because the skin is in close connection, from an early period, with the nervous system. Temperature in the human system is regulated by the three systems of nerves: Thermotaxic, or heat-regulating; thermo-excitory, or heat-increasing; and thermo-inhibitory, or heat-decreasing. If the thermo-inhibitory centres are too much stimulated they may lose their control, hence in certain individuals temperature rises from an antipyretic. The action on the heart may by its influence on the kidney circulation cause kidney and bladder symptoms, even to the extent of albumen in the urine. If the antipyretic is excreted through the kidneys, albuminuria is especially likely to present itself as an untoward result.

Our studies as to the relationship between chemical constitution and physiological action have not yet led us to such a wide and comprehensive grasp of the subject as to enable us to prophesy beforehand what will be the result of any given alteration, hence all new therapeutic agents have to undergo a long and tedious experimental trial before their ultimate value can be determined. Aside of the various antipyretics indicated in the treatment of migraine, the salicylates are often of great benefit, while the bromides are indicated in the second and third forms of this disease. The combination of an analgesic and antipyretic with the more specific remedies, salicylates or quinine respectively, conduce very greatly to the comfort of the patient, if not to a direct cure. Most

of the antipyretics have more or less serious drawbacks or general and frequent use in practice, although the dangerous effects of some of them have been exaggerated.

Like many others, I have had an opportunity to observe the clinical results obtained from the use of phenacetine, antipyrine, acetanilid, etc.; my clinical observations have been followed, watching the progress with examinations of the blood and urine and in some instances chemical and microscopical analysis of the stomach contents in cases which were accompanied by nausea and vomiting. I also kept full record of temperature and sphygmogram tracings of the pulse, respiration, etc., and have become convinced of the merit of phenalgin as a stimulant, antipyretic and analgesic.

Laboratory experimenters claim that phenalgin has no depressant effect upon the circulation, that it decreases the pulse-rate without disturbing the heart, the blood-pressure remains unaffected and the respiration shows no change. My experimentations on animals corroborate the above, and subsequently my clinical charts and sphygmogram tracings again positively confirm the above findings. Headaches are frequently caused by disturbances along the digestive tract, mostly due to fermentative processes caused by the invasion of pathogenic and non-pathogenic bacteria, and in these conditions phenalgin becomes of great service as an intestinal antiseptic; its alkaline properties acting not alone upon certain micro-organisms, but also correcting any hyperacidity.

That most antipyretics, analgesics, etc., have a depressant effect upon the heart is demonstrated by the histological changes of the red blood cells after medication. The erythrocytes appear shrunk and pale, indicating a lack of oxygen-carrying function. After phenalgin medication no such changes occur, indicating that it exerts a stimulating influence upon the red cells. No histological changes occurred in the leucocytes. Phenalgin can be safely combined with almost any other therapeutic agent.—*Medical Mirror.*

THE TREATMENT OF NASAL CATARRH BY THE GENERAL PRACTITIONER.

BY EUGENE C. UNDERWOOD, M.D.,
Surgeon L. & O. S. W. R. R.; Surgeon K. & I. B. Co., etc., Louisville, Ky.

I HAVE long entertained the view that the general medical practitioner neglects to treat his patients for catarrh, and sends them to a specialist, when he could successfully manage these himself. In fact, the treatment of catarrh is very simple and the results which follow correct and systematic treatment are very satisfactory. In

practice, two forms of chronic nasal catarrh are met. These are hypertrophic rhinitis and atrophic rhinitis.

The hypertrophic form is more generally seen, and is characterized by a thick mucous discharge from the nose, great liability to colds, obstruction of one or both nostrils, which forces the patient to breathe through his mouth; nasal intonation of the voice. There is more or less headache, and the sense of smell is lost or impaired. There is dryness of the throat, deafness and other symptoms showing the extension of the disease to neighboring organs. Exostosis of the osseous structures often is seen.

Atrophic rhinitis (ozena) is characterized by a sense of dryness in the nose and throat, a thick, purulent discharge, and the expulsion of discolored crusts and an offensive, putrid odor. The sense of smell is impaired, and the patient is weak and anemic.

The mucous membrane is dry and glazed, but in advanced cases ulceration and necrosis are present.

The treatment consists of applications directly to the diseased area and the administration of such internal remedies as will correct any coexisting disease or morbid state. In some cases where there is occlusion by exostosis the resources of surgery must be invoked.

Let me examine more in detail the treatment of the types of nasal catarrh.

In simple chronic hypertrophic rhinitis the results of treatment will be most flattering. In a case attended with no constitutional disease nothing is necessary beyond having the patient spray the nasal mucous surface with a solution composed of equal parts of water and hydrozone every three hours.

If the case has persisted some time, and the patient has an amount of mucous discharge, I have him take twenty drops of balsam of copaiba four times daily. The hydrozone is not only a disinfectant and germicide, but its curative action on the inflamed mucous membranes is speedy, and is not equalled by any other drug I have ever used. When the patient is anemic I have him take iron, and any other drug is used when it is called for by any associated disease or morbid condition, but the hydrozone spray is used in all cases.

In the atrophic variety we shall have to use the same local application. The hydrozone at once overcomes the offensive odor and takes off the purulent crusts.

These cases must be treated with cod-liver oil, iron, and such other remedies as will bring up the general health.

Here are a few clinical histories:

Mr. R. H. M., age 60, had been a sufferer for two years. There was no exostosis, but when he had a cold he could breathe only through his mouth. He was in good general health, so I had him buy an atomizer and use a spray composed of equal parts of dis-

tilled water and hydrozone. He sprayed the mucous surface of the nose every three hours. On this he made rapid improvement, and in three weeks had no further symptoms.

S. M. T., age 18, had chronic hypertrophic nasal catarrh in which the mucous discharge was very abundant, and this was associated with dryness of the throat and constant desire to hawk and spit. She used the hydrozone and water spray, and took fifteen drops of balsam copaiba three times daily. I had the pleasure of seeing this young woman go along to complete recovery in a period of six weeks.

Mrs. R. J. C., age 49. This lady had atrophic rhinitis, and as soon as she came near you the putrid odor asserted itself. Her general health was lowered. I had her use the hydrozone and water spray and take cod liver oil internally. She spent last winter in Cuba, and has just gotten home greatly improved in general health and her catarrhal disease is better.

She says the spray effectually destroys the disgusting odor, and that scarcely any discharge now appears.

I expect to see this patient entirely well in a few months.—Abstract from *St. Louis Medical and Surgical Journal*, July, 1901.

THE HIPPOCRATIC OATH FOR NURSES.

At the annual commencement of the New York School for Trained Nurses, held in the chapel of the City Hospital on Blackwell's Island, on June 14th, Mrs. Cadwalader Jones, chairman of the advisory board of the school, caused general surprise by submitting to the graduating class of fifty-two young women a modified form of the "Oath of Hippocrates," to which they readily subscribed.

Mrs. Jones, in presenting the diplomas, spoke as follows:

"Until very recently women have had so little part in any acual competition with men that they have been exempt from many rules by which men are governed, but the old order is changed, and with a share of men's honors and emoluments we must also be prepared to accept their responsibilities.

"The trained nurse necessarily occupies in the household a position of confidence compared to which even the physician is secondary. She is there at all times, while his visits are occasional; by day and night all that goes wrong in the sick-room and outside it must always inevitably be known to her.

"It is to the credit of your profession that, as far as I know, the knowledge thus gained has never been seriously abused, but there is a feeling, not general, perhaps, but widespread, that nurses gossip more or less in one house about what has happened in another.

"As doubtless you all know, a physician who graduates from a reputable medical school takes upon his graduation what is known as the "Oath of Hippocrates." That great physician lived more than 2,000 years ago, and scholars think that this oath may have been old even in his day. The gods by whom the ancients swore have been discarded, but duty and honor remain immortal.

"I will ask you to listen to a version of the Hippocratic oath, modified to suit your profession, and when you have heard it, to accept its obligations and to observe them faithfully.

"You do solemnly swear, each by whatever she holds most sacred:

"That you will be loyal to the physicians under whom you serve, as a good soldier is loyal to his officers.

"That you will be just and generous to all worthy members of your profession, aiding them when it will be in your power to do so.

"That you will live your lives and lead your profession in uprightness and honor.

"That into whatsoever house you shall enter it shall be for the good of the sick to the utmost of your power, and that you will hold yourselves aloof from all temptation.

"That whatsoever you shall see or hear of the lives of men and women, whether they be your patients or members of their households, you will keep inviolably secret, whether you are in other households or among your own friends.

"If you accept these obligations let each one bow the head in sign of acquiescence.

"And now, if you shall be true to your word, may prosperity and good repute be ever yours; the opposite if you shall prove yourselves foresworn."

Mrs. Cadwalader Jones' modified version of the Hippocratic oath caused a buzz of favorable comment among the physicians and others present.

GOOD, BUT HARD TO PASS.

We heard the other day of a North Carolina negro who swallowed a silver dollar, and on appealing to his medical adviser was informed that the juices of the stomach would dissolve it without injury to him. He was troubled with pain in his stomach whenever it became empty, so that he had to eat frequently. This continued for about two weeks, when it was "passed" in his stool. The dollar was not even tarnished, a singular fact when it is remembered that H_2S acts so readily upon silver, and that this gas is generally abundant in the intestines. The doctor who

attended him thinks it was not a counterfeit, and that it is the only case coming within his observation where a nigger couldn't get a dollar changed in two weeks.

We see another fact in this case worthy of attention, as there is no doubt that the accident actually happened as related, and that is that a very large body may pass through the alimentary canal. As to the pains from which he is said to have suffered, there cannot be anything strange in that; we have seen a good many people who suffered when their stomachs were empty.

Another feature of this strange case commends it to our careful consideration. When the man had swallowed the dollar, and thus loaded his stomach, his pocket was empty; a condition which has been known to produce the most profound mental agony, and finally to end with an "aching void" in the hypochondrium.

A little further reflection leads us to remark that indirectly many a good dollar goes into the stomach of the human animal, and that in many cases the pain resulting from their ingestion comes long before the stomach has become empty, as in the case herein described.

Another fact worthy of remark in this connection is that the amount was too small to operate for, and so no gastrotomy was done, but nature allowed to take its course, showing the greatest conservatism on the part of the physician. Had it been a double eagle, it is not to be supposed that nature would have had a thing to do with it.—Editorial, in *St. Louis Clinique.*

Dr. Jessop's Bill Before the Ontario Legislature.—Several important bills were introduced in the Legislature recently. One by Dr. Jessop (Lincoln) proposes to amend the Ontario Medical Act by changing the constitution of the Medical Council, in accordance with the ideas of Dr. Sangster and other medical men, who have protested against the powers now exercised by that body. As is known to the profession at present the Council consists of thirty members, five representing the homeopaths, eight appointed by the four medical colleges which are connected with Toronto University, Trinity University, Queen's University, and the Western University of London. The remaining seventeen are elected by the physicians of the Province. According to Dr. Jessop, there are only about forty homeopaths in Ontario, while there are 250 general practitioners for each representative they have on the Council. He proposes, accordingly, to abolish the provision for five homeopathic representatives, and also the college representation, and to substitute election of the entire thirty members by the profession.

The Canadian Journal of Medicine and Surgery

J. J. CASSIDY, M.D.,
EDITOR,
69 BLOOR STREET EAST, TORONTO.

Surgery—BRUCE L. RIORDAN, M.D., C.M., McGill University; M.D. University of Toronto; Surgeon Toronto General Hospital; Surgeon Grand Trunk R.R.; Consulting Surgeon Toronto Home for Incurables; Pension Examiner United States Government; and F. N. G. STARR, M.B., Toronto, Associate Professor of Clinical Surgery. Lecturer and Demonstrator in Anatomy, Toronto University; Surgeon to the Out-Door Department Toronto General Hospital and Hospital for Sick Children.

Clinical Surgery—ALEX PRIMROSE, M.B., C.M. Edinburgh University, Professor of Anatomy and Director of the Anatomical Department, Toronto University; Associate Professor of Clinical Surgery, Toronto University; Secretary Medical Faculty, Toronto University.

Orthopedic Surgery—B. E. MCKENZIE, B.A., M.D., Toronto, Surgeon to the Toronto Orthopedic Hospital; Surgeon to the Out-Patient Department, Toronto General Hospital, Assistant Professor of Clinical Surgery, Ontario Medical College for Women; Member of the American Orthopedic Association; and H. P. H. GALLOWAY, M.D., Toronto, Surgeon to the Toronto Orthopedic Hospital, Orthopedic Surgeon, Toronto Western Hospital; Member of the American Orthopedic Association.

Oral Surgery—E. H. ADAMS, M.D., D.D.S., Toronto.

Surgical Pathology—T. H. MANLEY, M.D., New York, Visiting Surgeon to Harlem Hospital, Professor of Surgery, New York School of Clinical Medicine, New York, etc., etc.

Gynecology and Obstetrics—GEO. T. MCKEOUGH, M.D., M.R.C.S. Eng., Chatham, Ont.; and J. H. LOWE, M.D., Newmarket, Ont.

Medical Jurisprudence and Toxicology—ARTHUR JUKES JOHNSON, M.B., M.R.C.S. Eng.; Coroner County of York; Surgeon Toronto Railway Co., Toronto; W. A. YOUNG, M.D., L.R.C.P. Lond.; Coroner County of York, Toronto.

W. A. YOUNG, M.D., L.R.C.P. LOND.,
GENERAL MANAGER,
145 COLLEGE STREET, TORONTO.

Pharmacology and Therapeutics—A. J. HARRINGTON, M.D., M.R.C.S. Eng., Toronto.

Medicine—J. J. CASSIDY, M.D., Toronto, Member Ontario Provincial Board of Health; Consulting Surgeon, Toronto General Hospital; and W. J. WILSON, M.D., Toronto, Physician Toronto Western Hospital.

Clinical Medicine—ALEXANDER MCPHEDRAN, M.D., Professor of Medicine and Clinical Medicine Toronto University; Physician Toronto General Hospital, St. Michael's Hospital, and Victoria Hospital for Sick Children.

Mental Diseases—EZRA H. STAFFORD, M.D., Toronto, Resident Physician Toronto Asylum for the Insane.

Public Health and Hygiene—J. J. CASSIDY, M.D., Toronto Member Ontario Provincial Board of Health; Consulting Surgeon Toronto General Hospital, and E. H. ADAMS, M.D., Toronto.

Physiology—A. B. EADIE, M.D., Toronto, Professor of Physiology Woman's Medical College, Toronto.

Pediatrics—AUGUSTA STOWE CULLEN, M.D., Toronto, Professor of Diseases of Children Woman's Medical College, Toronto.

Pathology—W. H. PEPLER, M.D., C.M., Trinity University; Pathologist Hospital for Sick Children, Toronto; Demonstrator of Pathology Trinity Medical College; Physician to Outdoor Department Toronto General Hospital; Surgeon Canadian Pacific R.R., Toronto; and J. J. MACKENZIE, B.A., M.B., Professor of Pathology and Bacteriology Toronto University Medical Faculty.

Ophthalmology and Otology—J. M. MACCALLUM, M.D., Toronto, Assistant Physician Toronto General Hospital; Oculist and Aurist Victoria Hospital for Sick Children, Toronto.

Laryngology and Rhinology—J. D. THORBURN, M.D., Toronto, Laryngologist and Rhinologist, Toronto General Hospital.

Address all Communications, Correspondence, Books, Matter Regarding Advertising, and make all Cheques, Drafts and Post-office Orders payable to "The Canadian Journal of Medicine and Surgery," 145 College St., Toronto, Canada.

Doctors will confer a favor by sending news, reports and papers of interest from any section of the country. Individual experience and theories are also solicited. Contributors must kindly remember that all papers, reports, correspondence, etc., *must be* in our hands by the fifteenth of the month previous to publication.

Advertisements, to insure insertion in the issue of any month, should be sent not later than the tenth of the preceding month.

VOL. XI. TORONTO, FEBRUARY, 1902. NO. 2.

Editorials.

CAUSES OF IDIOCY IN CHILDREN.

WE learn through an article in the *British Medical Journal*, that Dr. Tredgold's work at the Claybury laboratory in England, shows the potent influence of alcoholism, consumption and various neuroses in the parents in provoking idiocy in their offspring. Dr. Bourneville, from statistics gathered at the Bicêtre hospital for feeble-minded and epileptic children at Paris, observes in *Le Progrès Médical* that out of a total of 2,700 cases of boys affected with chronic diseases of the nervous system, he has proved the existence of syphilis in the

parents in only twenty cases, less than 1 per cent. Out of a total of 482 girls affected similarly there were only two cases of hereditary syphilis. Dr. Bourneville offers this explanation of the rarity of syphilis as a cause of idiocy. The effects of syphilis in the father or mother are revealed by miscarriages and then by the birth of infants before term. Infants born at term become athreptic and die during the first months or the first year of life. When, later on, syphilis becomes less virulent, either spontaneously or owing to treatment, the infants survive. They do not, however, come under the observation of a specialist in mental disease, unless they should acquire idiocy or a lack of intellectual development, as the outcome of convulsions, meningitis or contagious diseases. These considerations, in Dr. Bourneville's opinion, explain the very small number of cases of idiocy traceable to syphilis in the parents.

The injurious effects of intemperate indulgence in alcohol by parents, as a cause of idiocy in their offspring, is strongly brought out in Dr. Bourneville's statistics. Thus 36 per cent. of the fathers were intemperate; 3.1 per cent. of the mothers; 1.5 per cent. of both fathers and mothers—a total of 40.6 per cent.; 41 per cent. were of sober habits; of the remainder no accurate details on this point were obtained.

Unhealthy occupations followed by the parents appeared as a prominent cause of idiocy, epilepsy, etc., in their offspring. In the first rank, as causative influences are trades, in which the parents work at white lead, mercury, phosphorus, copper, etc. Dr. Bourneville's statistics show that eighty-seven families of these classes furnished 420 children, nearly five children per family.

Of these 420 children, 220 died, a mortality of 52 per cent.; 200 are living, a vitality of 48 per cent. If we add to the 220 who died 87 affected with idiocy, epilepsy, etc., we find that 73 per cent. of these children lost their lives or became seriously diseased owing to the unhealthy trades at which their parents worked.

The trades followed by the parents of the 87 idiots are as follows: workers in white lead, as house painters, 36; decorators, 4; letter painter, 1; carriage painters, 3; car painter, 1; painter of iron furniture, 1; painter on enamel, 1; painter on porcelain, 1; cooper in a white lead factory, 1; printers on wall-paper, 2; worker in phosphorus, maker of phosphorus matches, 1. The influence of mercury appeared as follows: hatters, 5; cloth-fullers, 4; looking-glass makers, 4. That of copper in the following: gilders, 4; moulders in copper, 6. Unhealthy dusts as follows: turners in

copper, 5; tobacco hands, 2; ornamental feather-makers, 3. The influence of turpentine was shown in 1 mother-of-pearl worker, and 1 japan varnisher. Total, 87.

The diseases of which the children died are classified as follows: miscarriages, 30; still-birth, 23; convulsions, 43; meningitis, 34 diarrhea, 12; athrepsia, 4; pulmonary tuberculosis, 13; broncho-pneumonia, 12; croup, 6; small-pox, 4; diphtheria, 3; whooping-cough, 4; measles, 3; cholerine, 2; accident, 1; different unknown diseases, 26. Total, 220. Among the parents of the children who died, one mother and two fathers were syphilitic; but in 87 families 58 fathers or 66.66 per cent. drank to excess.

Thus from the observations of Dr. Bourneville, alcoholic excess and the influence of unhealthy trades on the parents are the chief causes of idiocy among French children. J. J. C.

A MODIFIED TYPE OF VARIOLA.

In April, 1901, we published some observations on a modified type of small-pox, which broke out in the United States during the autumn of 1898, reached Canada in 1899, prevailed in this country in 1900 and 1901, and continues to prevail. We showed that the mildness of the disease was not due to the mitigating influence of vaccination, because marks indicating previous successful vaccination were absent in individuals exhibiting this very mild type of small-pox. It also appeared, that the resultant mortality was low. Thus from the beginning of the outbreak at Sault Ste. Marie, Ont., in December, 1900, up to March 8th, 1901, there were 131 cases and two deaths from small-pox in Ontario, a mortality of 1.5 per cent. We now know that there were during 1901, 1,860 cases of this usually deadly disease in Ontario, the majority of them being observed in Algoma and Nipissing (northern districts), with twelve deaths, a mortality of less than two-thirds of one per cent. As we said in April, 1901, the type of variola now prevalent in Ontario has not been made virulent by cold weather. Another factor worthy of consideration is, that this benignancy of type is not due to the use of antidotes or antiseptics, as the hyposulphites of sodium or calcium. Few patients seek medical advice during the period of incubation or even know that they have imbibed the contagion until its evolution is complete and actual febrile symptoms have begun. Neither can its benignancy be due to a

general high status of health among the 1,860 Ontario cases, for some of the patients must have been strumous, others tuberculous, and others again weakened by illness, overwork or bad hygiene. Another consideration in favor of this theory of the benignancy of the present epidemic is, that when virulent small-pox does attack a number of people, the robust catch the contagium and die of it, as well as the weaklings, a fact which would go to show that type in small-pox does not depend on the strength or weakness of the organism which it attacks.

It would appear from a report printed by the State Board of Health of Pennsylvania, that the present epidemic was introduced into the United States in 1898 by American soldiers returning from the Cuban war. This disease spread to the different Provinces of Canada, and still continues to present the characteristic mildness of the subtropical country from which it was imported. It is said that the small-pox contagium of hot countries such as Mexico and the West Indies, is milder than the same contagium grown only in colder countries, and it has also been shown that the contagium of small-pox is rapidly deprived of its power by great artificial or solar heat. The same is true also of vaccine. Fatal results have, however, been occasionally observed during the present epidemic in Canada. For instance, in March, 1901, a physician, of about forty years of age, who was said to be of a delicate constitution, died in ten days of small-pox at Toronto. In December, 1901, a shantyman died of small-pox, complicated with edema of the glottis, at a camp in Northern Ontario. At Mechanicsville, near Ottawa, a poor woman, a mother of a family, died of small-pox after ten days' illness. At Hull, near Ottawa there occurred in one family, three deaths from small-pox. These and a few similar instances do not, however, owing to their exceptional nature, disprove what has been stated about the benignancy of the epidemic. They simply indicate peculiarities in cases, not severity of type.

In New York City there was a rather high mortality from small-pox during 1901. Thus out of 587 cases occurring from June 23rd to December 7th, 1901, in that city, there were 164 deaths, a mortality of about 28 per cent. Boston reported in five months 400 cases and 47 deaths, a mortality of 11.75 per cent.; New Orleans, 70 cases and 6 deaths, a mortality of 8.5 per cent.; Philadelphia in three months 1,003 cases and 142 deaths, a mortality of 14.15 per cent. These higher mortalities,

particularly that of New York City, where the disease prevailed during the summer of 1901, would seem to show that some of the cases occurring in American ports may not have been traceable to the contagium now prevalent in Canada and Northern States, such as Minnesota and Wisconsin. A virulent type of small-pox, such as that prevalent during 1900 in Glasgow, or in Naples, Paris or London during 1901, may have passed through American quarantine stations, and have been thus introduced into the ports of the New World, that of New York City being, of course, the most frequented.

Compared with virulent small-pox the present Canadian variety seems trivial, so much so that many are emboldened to act as though mild small-pox would cause them no greater inconvenience than vaccination. The fatal flaw in this reasoning is that one cannot be sure that one may not be numbered among the mortality, even though the type is mild. Then again vaccination is a readier way out of the difficulty; for one cannot be sure that only a mild type of variola may continue to be disseminated through the highways and by-ways of this country. A specimen of the virulent variety may any day be landed on our shores, so that the people would do well to seek refuge in the true anti-variola harbor of refuge—an early and successful vaccination. J. J. C.

ANTI-ETHYLENE IN THE TREATMENT OF INEBRIETY.

In March, 1901, we alluded to the employment of anti-ethylene in the treatment of inebriety, this new agent having been brought to the notice of the profession by Drs. Triboulet and Mathieu, of Paris. They first produced in a horse the habit of willingly drinking alcohol. The blood of this animal subsequently furnished a serum, which, after injection into animals that had previously acquired a habit, and even a taste, for alcohol, produced in them such a disgust for it that they preferred to abstain from food or drink, rather than continue to take alcohol.

The experimenters have given to the unknown, undefined substance contained in the horse serum collected under these conditions the name of anti-ethylene. Clinical trials, made on drunkards or persons given to the general use of alcohol, have confirmed the experimental results obtained in animals. Dr. Marcello Ballo, in a

communication to the Royal Academy of Medicine of Madrid, June 15th, 1901, reports a case, the first treated in Spain, by the use of anti-ethylene. The patient, a tall, strong man, thirty-three years of age, had indulged in excess of wine and other alcoholic beverages from his seventh year; was of a violent, excitable temperament, ate and digested well except on the day after a spree, but suffered from obstinate constipation; liver and spleen slightly hypertrophied; heart and lungs sound. The urine was normal as to quantity, showing slight albuminuria. The nervous phenomena were very well marked; fibrillary tremors of the face and tongue; on beginning to walk subsultus tendinum was quite noticeable. The memory was weakened, sensibility normal. The patient complained of pricking feelings in the legs, of rotatory and oscillatory vertigo and diplopia when drinking heavily. He slept lightly and had frightful dreams. The diagnosis having been made, and the patient having consented to be treated, injections of 5 c.c. of anti-ethylene were administered every third day.

After the first three injections the attacks of vertigo became more frequent and persistent, and the creeping sensation became general; these phenomena disappeared six hours after the fifth injection, and did not return.

The injections were continued for about sixty days, until a total of 100 cubic centimetres had been given, which, in Dr. Ballo's opinion, should be sufficient to obtain a cure.

About the time of the seventh injection the patient began to remark in himself a certain disgust for alcohol, especially in the form of vermouth, absinthe, cognac, etc. Wine did not please him as much as formerly, and he drank a smaller quantity of it, because he soon had all he wanted. As the number of injections increased, this repugnance for alcohol became more strongly marked; at the fifteenth injection it was absolute.

Larger doses, 10, 15, 20 c.c. of anti-ethylene might have been used with impunity, but the dose employed, 5 c.c., soon produced manifest signs of improvement, and was considered sufficient.

The patient still continues to feel a positive aversion to alcohol. His digestion and nervous disorders have disappeared; the liver and spleen have returned to normal dimensions, the urine is normal in quality and quantity, appetite and digestion are good, and he may be considered cured.

Is he radically cured, asks Dr. Ballo? To whom one may reply in the language of old Spain, *Quien sabe?*

The change produced on the patient by anti-ethylene is remarkable; but if the patient will stay cured the change will be wonderful. J. J. C.

OUR 1901 STAFF DINNER.

THE regular annual dinner of the staff of the CANADIAN JOURNAL OF MEDICINE AND SURGERY took place in McConkey's grill room on Thursday evening, January 2nd. The gathering was a most enjoyable affair, and all present entered into the spirit of the occasion with a heartiness pleasurable to behold. A quiet function of this character, taking place once a year, engenders a *bon ami* in all who are participants, and is an occasion where the exchange of courtesies, as well as ideas, can result only in good and increased prosperity as far as the journal is concerned. Beside almost all the members of the staff, we had with us our dear old friend, Dr. Jas. H. Richardson; Dr. Chas. O'Reilly, the well-known after-dinner speaker; Rev. Dr. Briggs, who was decidedly "in the spirit" and made a capital speech in replying to the toast to "The other learned professions;" Dr. P. H. Bryce, who waxed quite eloquent; Crown Attorney Curry, who referred with fervor to our friends the osteopaths, viteopaths, etc., and the kind of legislation we will have to get to make them keep their place; Messrs. R. L. Gibson, H. W. Brick, and W. H. Chandler. We were exceedingly sorry that Dr. G. T. McKeough, of Chatham; Dr. H. T. Manley, of New York; Dr. A. J. Johnson, Dr. Jas. M. McCallum, who was then recuperating from a rheumatic attack at Welland Sanitarium; Dr. W. H. Pepler, who had to stay at home to nurse, not the baby, but a sore arm; Dr. Charles Sheard, who had intimated his intention, but was detained through official duties; Dr. Ezra Hurlburt Stafford, that poetic soul and non-believer in Spiritualistic seances; Dr. Bruce Riordan, Dr. J. J. MacKenzie and others, could not join the happy throng.

We think that we are correct in saying that, even in respect to the annual dinner and meeting of the clans, which our journal was the first in Toronto to propose and adopt, the CANADIAN JOURNAL OF MEDICINE AND SURGERY leads the van, and in this small, but we think effective way, wishes to spread among members of our profession a still greater spirit of *cameraderie* than may have existed in the past. Our motto is still, and shall be the same grand old cry, "United we Stand." W. A. Y.

EDITORIAL NOTES.

Lumbar Puncture in Cerebro-Spinal Diseases.—Lumbar puncture is recognized as a valuable means of diagnosis and treatment in the cerebro-spinal diseases of children (*Archives of Pediatrics*). In traumatic injury to the brain this procedure is said to be a useful *therapeutic* measure. Dr. Poirier reported to the Surgical Society of Paris (December 4th, 1901), a case in which fracture of the skull was feared, and in which the meningeal symptoms presented by the patient were supposed to be due to hypertension of the cerebro-spinal fluid. Lumbar puncture having been performed, from 30 to 40 grams of cherry-red cerebro-spinal fluid were allowed to escape. The good effects of this treatment were almost immediately observed. Vomiting ceased, and coma gradually disappeared, as did also the violent headache. On the following day the usual signs of a fracture of the skull appeared: ecchymosis of the nucha, sub-conjunctival ecchymosis, paralysis of the right rectus internus, etc. Eleven days after admission the patient left the hospital apparently in perfect health. As to the DIAGNOSTIC value of a rose-colored or blood-stained cerebro-spinal fluid, evacuated by lumbar puncture, in suspected cases of fracture of the skull, different opinions were expressed by some of the surgeons present, when Dr. Poirier's paper was read. Dr. Rochard mentioned a case, in which the presence of this red-colored fluid indicated a contusion of the brain. Dr. Tuffier had observed it after fracture of the skull, and also after an apoplectic stroke. Different views were likewise expressed as to the reason why the intense headache and vomiting present in grave injuries of the skull were relieved by lumbar puncture. Dr. Guinard attributed these symptoms to the presence in the cerebro-spinal fluid of some foreign body—air, blood, salt or water. Dr. Kirmisson opined that an excessive hypertension of the cerebro-spinal fluid was a sufficient cause to provoke these symptoms. Dr. Hartmann thought that any mechanical irritation of the meninges would suffice to produce them, without the presence of a foreign liquid; and finally, Dr. Reclus stated that some authors ascribed the intense headache, which sometimes occurred after lumbar puncture, to a loss of cerebro-spinal fluid, instead of a hypertension of that fluid.

Oxalic Acid in the Organs of Men and Animals and in Certain Vegetables.—In the October number of *La Clinica Medica Italiana*, Milan, appears a paper by Dr. A. Cipolina, of the Chemical Laboratory of the Pathological Institute at Berlin, containing original studies about the amounts of oxalic acid present in human and animal organs, and also in certain vegetables. As to the amount of oxalic acid in vegetables he observes that, if considered in an ascending scale, those which he examined should be read in the following order, viz.: carrot, mushroom, cauliflower, water-melon, kidney-beans, turnip, sorrel, spinach. He quotes Abeles as stating that he had found oxalic acid in spinach, sorrel and asparagus in considerable quantities, and only traces of it in tomato and carrot. He quotes Pierallini as to the amount of oxalic acid in tea. The latter took ten grams of tea leaves dried in the air, and boiled five minutes in 500 c.c. of water; filtered, and after concentrating the same to 200 c.c., looked for oxalic acid. He found gram 0.0315. Very interesting tables are given showing the amounts of oxalic acid discoverable in animal organs and also in human organs. His general conclusions are as follows: (1) Human and animal organs contain small quantities of oxalic acid, the spleen in the largest quantity (an exception being made in favor of the thymus gland, which, in the case of adults, need not be taken into consideration). (2) The amount of oxalic acid contained in the organs is small, but in general it amounts to about ten times the maximum quantity eliminated normally in twenty-four hours by the urine. (3) The spleen, sometimes perhaps the liver, and the muscles have the property of forming, by oxidation, oxalic acid from uric acid. (4) The amount of oxalic acid present in any nutritive substance is of great importance, when considering the nutrition of animals suffering from oxaluria or oxalic acid calculi.

Augmentation of the Red Blood Cells at Great Altitudes.—Several observers have recorded a considerable increase in the number of the red blood cells in individuals who had reached great altitudes. Thus, Viault recorded that at an altitude of 4,000 metres on the Cordilleras, he had found 8,000,000 red corpuscles per cubic millimetre of blood. In November, 1901, Dr. Gaule, Paris, made observations to ascertain if a similar phenomenon could be produced in an individual floating in a balloon, who had attained a great altitude in a short space of time, and without any expenditure of muscular force. Experiments made on two different

occasions, at altitudes of 4,200 to 4,700 metres, showed over 8,000,000 red blood cells per cubic millimetre of blood. Besides, Dr. Gaule, when at an elevation in a balloon of over 4,000 metres, having taken the precaution to make preparations of blood, according to Ehrlich's method, demonstrated, after coloration with eosin and hematoxylin, the presence of a great number of red blood cells, each containing a nucleus stained blue by hematoxylin. Frequently these nuclei were in a state of segmentation, and groups of three or four corpuscles were observed, which looked as if a subdivision of the cells had taken place, particulars which are not observed when the blood of the same individual is examined, under similar conditions, before ascending in a balloon. Dr. Gaule concluded that when an individual reaches a great altitude, there is a real formation of red corpuscles in the blood, and that they are formed very rapidly.

Sewage Disposal Works are not required at Toronto.—There is no sanitary need of sewage disposal works at Toronto. The city water supply is fairly pure, as appears from the typhoid fever rate of 1901, viz., 119 cases, with twenty-three deaths, a mortality of 19.32 per cent., certainly a small typhoid sickness-rate for a city of 208,000 population. Toronto's water supply, which is drawn from Lake Ontario, is protected from the sewage-laden waters of Toronto bay by an island of sand, which lies opposite the city and by a long shoal, which extends into the lake from the south-west extremity of the island. If the water supply should at any time become notably polluted, the cheapest and best method of restoring it to a wholesome condition would be to place Hyatt filters on the Esplanade near the Water Works, through which the water would be pumped before distribution. At St. Thomas, Ontario, the impure water of Kettle Creek is made quite wholesome after passage through Hyatt filters. Many similar examples of water purification in American cities could be given if necessary. Apart from the natural wish of citizens who own island lots, to see the waters of Toronto Bay restored to their primitive clearness, or the desire of those interested in navigation to deepen the city harbor, there is no need of a trunk sewer and sewage-disposal works.

Respiration at Great Altitudes.—On November 21st, 1901, Drs. Tissot and Hallion ascended from Paris in the balloon Eros, in order to make some physiological observations on the physical and

chemical phenomena of respiration. Trials were very carefully made at 1,300, 2,600 and 4,500 metres by Dr. Tissot, and at 1,700 and 3,500 metres by Dr. Hallion. Both observers noted that at these different altitudes there was no change in the chemical phenomena of respiration. On the other hand, the utilization of the respired air was considerably modified. If the quantity of air introduced into the lungs is less, which depends on the fact that the number of inspirations is not sensibly increased, it seems that, by compensation, an individual at a great altitude utilizes the air he breathes in a better and more complete manner than he would at a lower elevation above the earth's surface.

Poisoning by Monoxide of Carbon.—Mr. Grehand of Paris, has made some observations to determine the best method of procuring the elimination of monoxide of carbon from the blood of individuals poisoned by this gas. He shows that during the twenty minutes immediately following intoxication with this gas, no benefit is obtained by introducing fresh air into the lungs. In order to displace monoxide of carbon from the combination which it forms with hemoglobin, the inhalation of pure oxygen is indispensable. This observation will have a practical application in the treatment of poisoning by illuminating gas, the principal lethal agent of which is monoxide of carbon. J. J. C.

ITEMS OF INTEREST.

Off for South Africa.—Amid the cheering of several hundred medical students and members of the local Army Medical Corps, the Montreal express pulled out of the Union Station on the evening of January 9th, bearing Toronto's recruits for the Canadian Field Hospital Corps for service in South Africa. Among the prominent officers gathered at the station to see the men off were Commander Law, Col. Otter, Col. Neilson, Major Fotheringham, Capt. Shanly, Capt. Clark, Lieut. Roberts, John King K.C., and Dr. Adam Wright. The men who left with the Hospital Corps were: Dr. R. F. Parry, Jas. Henderson, George F. McKenzie, D. McD. King, Charles Springford, E. Wickson, James Biggar, 7th Field Hospital; W. B. Law, 7th Field Hospital; W. Dunk, No. 4 Bearer Co.; Ethelbert Latta, medical student. Drivers—S. J. A. Williams, J. Milne, 48th Highlanders; G. Chapman, Harry Brennan, and Hugh F. Brown. Private Parry was ap-

pointed provisional corporal by Col. Otter, an appointment which was duly confirmed at Halifax by Surgeon-Lieut.-Col. Worthington. Corporal Parry resigned his position of House Surgeon to Grace Hospital to practise in Dunnville. He furnished a surgery there but was unfortunate to be burnt out a day or two before he left for South Africa, and lost everything. He immediately came back to Toronto and joined the Field Hospital. In spite of all reports to the contrary, the Field Hospital Corps sailed from Halifax with the second section of the Canadian Mounted Rifles, leaving the point of embarkation on January 22nd on the *Victorian.* It was the lady nurses to whom Col. Neilson referred when he said that accommodation could not be found for them on the transports with the Canadian troops. Dr. R. F. Parry is a younger brother of Dr. W. T. Parry of Spadina Avenue, Toronto.

New York School of Clinical Medicine.—The New York School of Clinical Medicine, 328 West Forty-second Street, will begin the winter series of Tuesday Evening Lectures on January 7th, 1902. These Lectures are independent from the regular course of instruction. A cordial invitation is extended to members of the medical profession. The following are the subjects of the several Lectures, with the names of the speakers: On January 7th—Operative Treatment of Traumatic and Pathological Lesions of the Joints—Dr. Robert H. Cowan. January 14th—The Chemico-Microscopical Examination of the Stomach Contents for the Purposes of Diagnosis—Dr. Heinrich Stern. January 21st—Inebriety and its Pathology. 22nd—Treatment and Cure. 23rd—Questions of Legal Responsibility—Dr. Thomas D. Crothers. January 28th—The Action and Application of Periodic Induced Currents of Electricity in Diseases of the Female Pelvic Organs—Dr. Augustin H. Goelet. February 4th—Diagnosis and Pathological Characters of Tumor Formations in the Right Lateral Half of the Abdominal Cavity—Dr. Thos. H. Manley. February 11th—Practical Points on Pessaries—Dr. A. Ernest Gallant. February 18th—Headaches—Dr. J. Albert Meek. February 25th—Mechanical and Surgical Treatment of Hernia—Dr. Carl E. Pfister. March 4th—Tuberculosis of the Larynx—Dr. Max J. Schwerd.

Treatment of Nervous Diseases.—Dr. Campbell Meyers has recently completed some changes in the treatment room of his

Private Hospital for Diseases of the Nervous System at Deer Park, by which hydrotherapy, so essential in the treatment of these diseases, can be fully utilized. A new shower and needle bath, with liver spray and a Scotch douche, have been added. The temperature and pressure of the water are carefully regulated by special appliances, so that hydrotherapy in all its details may be scientifically applied. The needle bath is arranged with a series of roses, so that its value in treatment is much greater than the ring needle bath in general use. A second clock, to measure the exact duration of the treatment, is a useful and important feature. Dr. Meyers has also a laboratory equipped with the latest appliances for clinical research. The dispensary is supplied with the purest drugs used in neuriatry, and is in the charge of an experienced pharmacist. Dr. Meyers spent four years in the chief medical centres of Europe studying these diseases. An assistant physician devotes his attention to analytical and electrical work, and the nursing is done by a large staff of specially trained nurses. These, together with the other facilities for treatment which this hospital, with its surroundings, offers, make it one of the best medical hospitals in the Dominion.

The New Woman's Hospital, Toronto.—Despite our good advice of a few months ago, the medical women are determined to found a separate Woman's Hospital, solely for the treatment of women, and the medical staff is to be of the same gender. A heavenly dwelling where mere man will have no place. "Angels, ever bright and fair. take, oh, take me to your care." Money has been subscribed for building purposes, and a meeting held at the residence of Mrs. George A. Cox, and soon, in spite of our strong views against the multiplying of city hospitals, and our firm conviction that in union lies strength, we doctor men are cavaliers enough to stand uncovered a moment and wish success to the new enterprise. No flowers.

Another Addition to Our Staff.—It is a source of great pleasure to us to announce that our staff has had added to it the name of Dr. Arthur Jukes Johnson, who will from this date have senior charge of the Department of Medical Jurisprudence and Toxicology. Dr. Johnson is too well and favorably known to require even an introduction to the profession. He is the oldest (appointed) coroner in Toronto, and is known all over Canada as

a specialist in medico-legal work. Our readers can therefore look forward with interest to contributions from time to time to our department of medical jurisprudence from the pen of Dr. Johnson.

The Secret of a Long Life.—Sir James Grant, of Ottawa, delivered a lecture upon "The Secret of a Long Life," under the auspices of the Women's Residence Association of Victoria College, on the evening of January 14th. The Doctor, during his very interesting address, advocated total abstinence from the use of intoxicating liquors, and made a strong plea for prohibition, not by prohibitory law, but that which is the result of education; enlightenment upon the harmful nature and health-destroying agency of the use of intoxicating liquor.

Accident to Dr. W. T. Stuart.—Dr. W. T. Stuart, of Spadina Avenue, met with a painful accident at Trinity Medical College a few weeks ago, which might have caused the loss of his eyesight. The doctor was lecturing to his class in practical chemistry, one of the students was mixing a preparation of caustic potash; the potash exploded, blowing up into the doctor's face. Fortunately under careful treatment Dr. Stuart has been steadily recovering.

Off to the Bermudas.—Dr. A. J. G. Macdougall, house surgeon at the Toronto General Hospital, left for Hamilton, Bermuda, two weeks ago, he having received the appointment of civil medical attache at the British Residency in charge of Boer prisoners. Dr. Macdougall is a young man, and his appointment is regarded by his friends as a high mark of recognition of his ability in his profession.

Recruits for Hospital.—Dr. G. C. Ferrier, a graduate of Queen's Medical College, and Daniel Eby, a South African veteran, left Kingston on January 8th for Halifax, to join the Field Hospital Corps.

Canadian Nurses Appreciated.—The Militia Department sent five Canadian nurses to South Africa by way of England at the order of the Home Authorities.

PERSONALS

Dr. W. A. Young spent the 21st, 22nd, and 23rd of January in Chicago.

Dr. J. J. MacKenzie, Professor of Pathology, Toronto University, spent, with Mrs. MacKenzie, the Christmas holidays with friends out of town.

Lieut. Domville, of Woodstock, N.B., declined the position of Assistant Veterinary to the Montreal Rifles, and Dr. James, of Ottawa, was appointed to the vacancy.

Dr. John Caven has taken up practice again, and has opened an office and laboratory in the house of his brother, Dr. W. P. Caven, at the corner of Gerrard and Church Streets.

Dr. J. A. Roberts, of this city, who left with the Field Hospital Corps on January 9th for active service in South Africa, was tendered a banquet by several of his friends a day or two before leaving.

The large collection of microscope slides, owned by the late Dr. L. M. Sweetnam, has been purchased by Trinity Medical College. The Doctor's splendid library has been purchased by Dr. Howard Kelly, and presented by him to the Toronto Medical Library.

The medical profession of Toronto, and more especially those perhaps connected with the staff of Toronto General Hospital, sincerely regret the demise last month of Mr. Walter S. Lee, who for so long had occupied the position of President of the Board of Directors of Toronto General Hospital.

Dr. Newton Albert Powell entertained a goodly number of the city profession on January 17th at his home, cor. McCaul and College Streets. The occasion was a reception to our distinguished confrere, Dr. Drummond, of Montreal, author of "Johnny Corteau." Dr. Powell's hospitality was thoroughly enjoyed by all.

We beg to call attention to the advertisement, on page xxviii. of this issue regarding the sale of the house of the late Dr. Lesslie M. Sweetnam, cor. Church and Shuter Streets. This is one of the greatest snaps in the city, the house being the best in Toronto for the purposes of a practising physician, and at the same time handsome and rich in appearance, and is in a neighborhood where a big practice could be worked up with very little effort.

Correspondence.

The Editor cannot hold himself responsible for any views expressed in this Department.

THE TRADE'S UNION AND THE MEDICAL PROFESSION.

To the Editor of THE CANADIAN JOURNAL OF MEDICINE AND SURGERY:

DEAR SIR,—Attention is drawn to the above subject by a communication in our esteemed co..temporary, *American Medicine*, from the able pen of Dr. M. V. Ball. The Doctor goes on to show that the ethics of all medical combinations, societies, etc., are based on the principles of trades' unionism. He says: "The physician, by his society or organization, hopes to secure proper qualifications for all such as intend to practise medicine; a minimum rate of compensation for his service, and the proper recognition of his organization. He cannot easily obtain the latter, but he attempts it by State regulation, and licensing, and if the workingman could have his trade protected by a State license he would be glad to forego the trial of a strike, for there would be no need of it in order to secure recognition of his union. If it is said, that a physician may or may not belong to a medical organization and still be in good standing, it can also be said that three-fifths of the workingmen are unorganized and yet work with others who are union men. When union men are on strike for a principle, they have no words strong enough for the men who will take their places. Were the physicians employed in a certain hospital to resign, because of an attempt on the part of the managers to violate some sound ethical principle, or because of a refusal to employ them as they belonged to a medical society, they would be as much inclined to shout 'scab' at the doctors who usurped their positions as are the poor workingmen at those who take their places. What respect have physicians for the man who seeks to gain patients by lowering his fees? The same respect the union workingman has for the man who works for less than the minimum rate. When their opponents are fair the labor unions are in every way the equal of medical unions, and there is a spirit of sacrifice and unselfishness in them that is not to be found in any medical organi-

zation, and Dr. Ball speaks from experience in both. Medical men are fortunate in still owning some of the tools of their profession; but it will not be long before they will be obliged to defend themselves against the greed and commercialism of lay managers, insurance organizations and other institutions conducted for profit, and, perhaps, they will be very glad, then, not only to look to the labor unions for advice, but to invoke their aid in securing a living wage and the right to organize. The fight between labor and capital has not yet had its historian; but, when the story will be correctly told, the labor unions will stand forth brilliantly white against the blackness and foulness of their opponents. Medical unions need have no fear of demeaning themselves by adopting the principles of the labor union, whose motto universally is: 'One for all, and all for each.'" To all of which we say amen!

Dr. Gould, the editor of *American Medicine,* however, handles Dr. Ball without gloves, and among other absurd and untenable assertions says: "In work and methods the physician is essentially and universally free. . . . Trades' unionism in medicine would be organized selfishness, and the regulation of all conditions and motives for financial considerations. This would not be conducive to professional unity, nor would it be for the public welfare." Editor Gould expresses especial sympathy for the "scab." Now, is it not about time some plain truths were told, that may let in a little sunshine, and that plain facts were stated?

Do we not all know that there never has been such a thing as "professional unity," and that medicine has been divided into factions? Do we not know that the enforcement of a proper code of discipline means professional death to him who ignores it? The toiler labors primarily for himself, indirectly for the common weal. Does the physician do more?

The medical trusts are now taking shape in the form of colossal hospitals, dispensaries, insurance companies, the paid physician of the corporation, whose duties are to crush out all competition of every description, under a very much larger development and enforcement of the principle of trades' unionism in medicine.

In Great Britain the subject of medical underbidding has now become a matter for Parliamentary discussion, and members of the Council of the British Medical Association stand a good chance of an early decapitation by the plodding members of the British Medical Association.

The supreme indifference of the greater number of leading medical officers in the State and County medical societies to the wants and needs, and to the protection of "the men in the ranks," has led to such lack of interest in the profession, that not more than one-half of the general practitioners are attached to medical organizations of any description.

"To limit the output" is clearly within the right of any corporation of men. If it is right for the trust, why not for those who created the trust or made it possible? In medicine, it was long since found indispensable to raise the standard, the financial equipment of the apprentice and student, so as to, in some cases, absolutely exclude the self-made man or the poor student, and reduce the output of doctors fully 50 per cent. It is true, we do not assault the medical scab in America; but he has been murdered in Europe. Here, we reduce him by a more refined though none the less cruel, method of slow starvation; but as he elected to take the chances, so let him abide by them.

115 W. 49th Street, New York. T. H. MANLEY.

Systematic Mouth Disinfection as a Prophylactic Measure.—IN an able editorial (*The Dietetic and Hygienic Gazette,* March, 1899) this important subject is treated in all its phases. It is claimed that if competent persons regularly examined the mouths of all school children, treated or removed all carious or diseased teeth, and enforced instructions with regard to the systematic and effective employment of proper antiseptic solutions and tooth-brushes, the death-rate in this country would be materially reduced. Nor would the benefits derived from the employment of such precautionary measures stop here. A stronger and more vigorous race would be another consequence. The mouth is naturally an incubator supplying all the conditions needful for the proliferation of disease-producing germs. Such germs easily find access with many others of a harmful character, and are always a source of danger. Nearly all effective germicides are themselves poisons, and consequently are not suited for disinfecting the mouth. But of all recognized antiseptics, none is more powerful than hydrogen dioxide, and this is at the same time entirely harmless. Its action depends upon the presence of oxygen, the most common element in the body. When applied, oxygen is set free, and this at once seeks union with that for which it has the greatest affinity in the process known as oxidation. In this process all albuminous matter, bacteria and other food products are destroyed. Oakland Hydrogen Dioxide is chemically pure, and therefore the safest and best for mouth disinfection.—*Medical News,* June 30th, 1900.

The Physician's Library.

BOOK REVIEWS.

Water and Water Supplies. By JOHN C. THRESH, D.Sc. (London), M.D. (Victoria), D.P.H. (Cambridge), Honorary Diplomate in Public Health, Royal College of Physicians and Surgeons, Ireland; Medical Officer of Health to the Essex County Council; Lecturer on Public Health, London Hospital Medical College; Fellow of the Institute of Chemistry; Member of the Society of Public Analysts; Associate Member of the British Association of Waterworks Engineers; Engineer in Hygiene, London University, etc. Third edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1901.

As the author says: "The main object of this little work is to place within the reach of all persons interested in public health the information requisite for forming an opinion as to whether any supply or proposed supply is sufficiently wholesome and abundant, and whether the cost can be considered reasonable." The evidence regarding the effects of pure water on health, and the facts showing the influence of a water supply in producing diarrhœa, goitre, plumbism, malaria, enteric fever, cholera, are given *in extenso.*

The effects upon animals of drinking polluted water are also given. The writer says: "At the present time no one would contend that water fouled by cattle was fit to be used by man for drinking purposes, and probably ere long proofs will be forthcoming that the use of such water by cattle is not only inimical to their health, but also a source of danger to the public generally, who consume their milk and flesh."

The author evidently does not attach a supreme importance to expert examination of a water supply. In fact, he goes so far as to say that "Bacteriological, microscopical, and clinical examinations must always be associated with a thorough investigation of the source of the water to ascertain the possibility of contamination, continuous or intermittent."

And again, "The attempt to set up a standard of purity, based upon the number of micro-organisms in a given quantity, is as

illogical as the old chemical standards. Both depend upon quantity, whilst the real point at issue is the quality."

In view of the fact that Koch could not find the comma bacillus in the imperfectly filtered water of the Elbe, which was known to be polluted with cholera excreta, and to the use of which Koch and others attributed the outbreak of cholera at Hamburg, one is forced to admit that so marked a disease as cholera can be produced by a water supply, although the latter can be examined bacteriologically with negative results. The same objection, according to Dr. Thresh, applies to the fruitless search for the Eberth bacillus in water supposed to have caused typhoid fever. Although Dr. Thresh's book was published in 1901, he was evidently unaware of Professor Chantemesse's views on the proper methods of seeking for the Eberth bacillus in specifically polluted water. (For Professor Chantemesse's paper, see *La Presse Medicale,* Paris, June 5th, 1901.) J. J. C.

Hemmeter—Diseases of the Intestines. Their Special Pathology, Diagnosis and Treatment.. With Sections on Anatomy and Physiology, Microscopic and Chemic Examination of the Intestinal Contents, Secretions, Feces, and Urine. Intestinal Bacteria and Parasites; Surgery of the Intestines; Dietetics; Diseases of the Rectum, etc. By JOHN C. HEMMETER, M.D., PH.D., Professor in the Medical Department of the University of Maryland; Consultant to the University and Director to the Clinical Laboratory, etc. In two volumes. Vol. I.—Anatomy, Physiology, Intestinal Bacteria, Methods of Diagnosis, Therapy, and Materia Medica of Intestinal Diseases, Diarrhea, Constipation, Enteralgia and Enterodynia, Meteorism, Dystrypsia, Enteritis Colitis, Dysentery, Intestinal Ulcers, Intestinal Neoplasms, etc. With many original illustrations, some of which are in colors. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1901. Large octavo, 740 pages. Price, $5.00 per volume. Canadian Agents: Chandler & Massey, Limited, Toronto.

The name of Hemmeter is known all over America as that of the author of the splendid work on diseases of the stomach, which had, and still has, a large sale. It is, therefore, not to be wondered at that a work in two volumes by the same author on Diseases of the Intestines has already received, almost universally, favorable comment, Dr. Hemmeter being well able to give to the profession a scientific presentation of such a subject.

He has divided his book into two volumes. The first covers Anatomy, Physiology, Intestinal Bacteria, Methods of Diagnosis, Therapy and Materia Medica of Intestinal Diseases, Diarrhea, Constipation, Enteralgia and Enterodynia, Meteorism, Dystryp-

sia, Enteritis, Colitis, Dysentery, Intestinal Ulcers, and Intestinal Neoplasms. A few of the chapters have been contributed from outside sources, "The Anatomy and Histology of the Intestines" being from the pen of Dr. J. Holmes Smith; that on "The Examination of the Feces and Urine" is by Dr. Harry Alder; the chapter on "Intestinal Bacteria" is written by Dr. W. R. Stokes, and the one on "Diseases of the Rectum" by Dr. T. C. Martin, of Cleveland. One chapter, which we read with care and considerable interest, is that on "The Methods and Technics of Diagnosis," running over 23 pages. The paragraph on Electrodiaphany—transillumination of the intestine—is certainly well worth reading, and we congratulate the author upon being able to present the subject so attractively. The use of the X-rays in the diagnosis of the intestinal disease; palpation and percussion of the abdomen, mensuration, auscultation, exploratory puncture of the abdomen, inflation of the intestines for diagnostic purposes with carbonic acid gas, with air, and by the injection of water through the anus, are also gone into in a most intelligent manner. About 70 pages near the close of the volume are devoted to ulcers of the intestine, and under that heading the author covers the ulceration, not only of inflammatory processes, but those the result of acute and chronic infectious disease and those occurring in constitutional diseases. We feel that Dr. Hemmeter will receive in this, his latest production, the hearty support of the profession as a body.

The Practical Medicine Series of Year-Books. Edited by eminent Specialists and Teachers, under the General Editorship of GUSTAVUS P. HEAD, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Chicago: The Year-Book Publishers, 40 Dearborn Street.

Parts I. and II., on General Medicine and Surgery, have come in this month. We are greatly pleased with the character of the work. Each volume, being edited by a specialist in his particular line, is a guarantee that the best selections will be made from the literature of the year.

The work is not made up of disjointed extracts from journals, but is arranged in good readable form, credit being given to the various authors and journals from which the extracts are taken.

In the volume on medicine, tuberculosis is dealt with in all its phases—diagnosis, including the tuberculine test and radioscopy; treatment, including all the newer drugs and methods of treatment, both at home and in sanatoria.

Sixty pages are devoted to the heart and circulation. We were especially pleased with the articles on diagnosis, and the uses and abuses of digitalis and the uses of the nitrites.

Good plates are given of variola on the sixth and tenth days of eruption, and of varicelli on the fifth day. Tables for differential diagnosis between variola and varicelli are given. The various features of the prevailing smallpox outbreak are well taken up, as is also the subject of vaccination.

The second volume of the series edited by Dr. John B. Murphy, opens with selections on anesthesia, general and local. Considerable space is given to lumbar puncture, with reports of cases and careful observations on the effects and results; 122 pages are devoted to diseases of the abdomen, including stomach, intestines, and appendix.

In the chapter dealing with diseases of the extremities, 13 very clear and instructive stereographs are given.

Diseases of the kidney, bladder, and rectum are well represented. The work is illustrated by 30 plates and 19 figures. We think this series of year-books will be highly appreciated by the profession, and especially by the busy practitioner, who will here find the best work of the year in any line selected and arranged by a specialist in that line. W. J. W.

The Outcasts. By W. A. Fraser. Illustrated by Arthur Heming. Toronto: William Briggs.

One of the most interesting animal stories of the day, and describes the passing of the bison (bison Americanus). The passing from the face of the earth of this, the largest of the native animals of North America has taken place within the last thirty years, and its extermination may be laid to lax government restrictions in protecting the wanton destruction of this noble quadruped by profit hunters who destroyed it merely for its hide, while its carcase was left for carrion. In 1858, when a party was traversing the country by waggon train from the State of Missouri to Mexico, they were continually surrounded by large herds of buffalo; so numerous were they that an eye-witness said: "They were in bands, in masses, in hosts. The shaggy black creatures thundered along in front of us, thousands upon thousands, tens of thousands upon tens of thousands, an innumerable mass, the flesh of which, as we believed, was sufficient to provide the wigwams of the Indians unto all eternity." In 1889 Mr. William T. Horniday estimated the number of survivors to be eight hundred and thirty-five, including the two hundred then living in Yellowstone Park, under the protection of the Government. This, I am sorry to say, is likely to be the fate of the moose and other species of deer in the near future, unless rigid laws are enacted for their protection. There is a species of buffalo called the wood buffalo, which inhabits the wooded uplands south-west and west of Lake Athabasca, which is supposed to be the survivor of the bison Americanus, but

its environment has changed it very much. The bulky shoulders and short legs have been replaced by narrower shoulders and longer legs, nature's change to allow the easy passage of the animal between the trees, and to adapt it to its changed methods of life. Mr. Fraser describes this transition from prairie to woodland of the buffalo in a delightful story, which has a moral teaching which cannot be too much praised, and I feel glad that I have read this book, and heartily commend it to the reading public.

A. J. H.

A System of Physiologic Therapeutics. A practical exposition of the methods, other than drug-giving, useful in the prevention of disease, and in the treatment of the sick. Edited by Solomon Solis Cohen, A.M., M.D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic, etc. Vol. VI., Dietotherapy and Food in Health, by Nathan S. Davis, A.M., M.D., Professor of Principles and Practice of Medicine in North-Western University Medical School. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1901. Canadian Agents: Chandler & Massey, Limited, Toronto.

Frequently a medical man, in the treatment of his cases, pays too little attention to the subject of diet in disease, this being due to unintentional carelessness in many instances, but often to a certain lack of knowledge of that important department of therapeutics, dietotherapy. That the kind of food which should be allowed to be partaken of by patients during illness is just as important as the nursing or the prescription itself goes without saying; but up till comparatively recently this was often paid too little attention to, thus delaying the stage of convalescence. Dr. Davis' volume in this series gives an immense amount of information upon dietetics, and discusses under each disease the kind of food which should be given. The author also goes into the details of both "the chemical and the physiological data concerning the nutritive and other qualities of various kinds of food," which, to even the older physician, who may have become rusty in his primary studies, will be found at once interesting and most instructive. Vol. VI. of Physiologic Therapeutics is rather ahead of, than behind, the preceding volumes.

W. A. Y.

Venereal Diseases. A Manual for Students and Practitioners. By James R. Hayden, M.D. Third edition. Philadelphia: Lea Brothers & Co.

This little book, which is one of the series of Pocket Text-Books, has been brought fully up-to-date. New sections on Vegetations and Herpes progenitalis have been added, and also many new illustrations. The text has been completely revised and in

many parts rewritten. It is satisfactory to note a conservative tone in respect to remedial systems, and the author gives but little encouragement to the more violent methods of treatment, which have been advocated from time to time by the more enthusiastic of the supporters of the abortive treatment of gonorrhea, and gives a caution against too early attempts at aborting a gonorrhea, when that particular method is employed. The chapters on the various forms and causes of stricture, its causes and treatment, are exceedingly good, but the very decided preference evinced by the author for soft instruments in examinations of the urethra as against silver and steel instruments and sounds might be open to attack.

Urinary fever receives full consideration, and also a subject very closely connected with it, the care and use of instruments. In this part of the work, in which syphilis and its varied manifestations is considered very fully, the table given for the differential diagnosis of the chancre and chancroid is well worked out, and very clearly gives the distinctive features of the two conditions, and must prove of the utmost value to students and practitioners generally. In the administration of mercury for constitutional syphilis the author prefers the use of inunctions, and gives clear and full directions for carrying out the inunction satisfactorily. It is not possible to go into the various chapters of this book, but the impression made by it as a whole is, that it is a practical work of the very highest utility, containing all that is necessary for the practitioner or student. J. H. L.

Progressive Medicine, Vol. IV., 1901. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 400 pages, 13 illustrations. Per annum, in four cloth-bound volumes, $10.00. Philadelphia and New York: Lea Brothers & Co.

In Volume IV. of Progressive Medicine, we find the following subjects taken up : Diseases of the Digestive Tract and Allied Organs—liver, pancreas, and peritoneum, Genito-Urinary Diseases, Anesthetics, Fractures, Dislocations, Amputations, Surgery of the Extremities and Orthopedics, Diseases of the Kidneys, Physiology, Hygiene and Practical Therapeutics. Among the contributors appear such names as Chalmers DaCosta, William Ewart, W. B. Coley, Jos. C. Bloodgood, Max Einhorn, Alfred Stengel, H. B. Baker, and A. L. Turner of Edinburgh.

Perhaps the most practical section is that by Dr. Jos. C. Bloodgood, the Associate Professor of Surgery in the Johns Hopkins

University, dealing with Anæsthetics, Fractures, Dislocations, Amputations, Surgery of the Extremities, and Orthopedics. It covers about 120 pages, and is immensely instructive. Dr. Bloodgood gives all the methods of producing anesthesia, both local and general, with their relative value as to efficiency and safety. He discusses lumbar puncture and use in spinal anesthetization. The author attaches, and in our opinion correctly, a great deal of importance to the examination of the blood in surgical cases.

Dr. Henry B. Baker's chapter on Hygiene is very interesting, and will, we know, attract a good deal of notice, as he takes up the subject which has so recently called forth so much discussion, viz., bovine and human tuberculosis.

Marietta: a Maid of Venice. Toronto: The Copp, Clark Co., Limited.

"Marietta: a Maid of Venice" is the title of F. Marion Crawford's romance, depicting the struggle of Lorzi, the Dalmatian, to become an independent glass-blower in Venice. It is partly founded on historical fact, showing very clearly the narrow views held by the Venetian guild of glass-makers at the latter end of the fifteenth century, and their determination to exclude foreigners from participating in their special privileges. The story, which contains many descriptions of the scenery of the City of the Doges, and is brimful of the light and shade of Venetian life, ends happily in the artistic triumph of Lorzi and his attainment of the full rights and privileges of the glass-blowers' guild.

Fortunate in love, also, he wins the heart and hand of Marietta Beroviero, his master's daughter, who prefers a man of talent to a brainless nobleman. This same nobleman, Jacopo Contarini, plays a more notable part in the sub-plot of the romance, which details the amorous adventures and intrigues of Arisa, a Georgian slave, with him, and also with the heavier villain, the Greek pirate, Aristarchi. These adventures, which are warm in color and realistic in outline, seem placed on the canvas to illustrate the less admirable phases of human existence. By very contrast, the soul-lit lives and pure loves of Marietta and Lorzi illuminate young, passionate, human nature with a serene and very satisfying light.

J. J. C.

A Manual of Volumetric Analysis. By VIRGIL COBLENTZ, PH D., etc., etc. Philadelphia: P. Blakiston's Son & Co. Canadian Agents: Chandler & Massey, Limited, Toronto.

This work is one which can be recommended to medical students and practitioners as containing in comparatively small compass a fairly up-to-date treatment of a branch of chemical work which is becoming more and more important on account of the

greater attention given to accurate analysis of urine and gastric contents.

In the first chapter upon apparatus and their calibration and use we might suggest that the space occupied by the illustration of three antiquated burettes might have been used to better advantage by an account of one of the quick methods of calibration, and some hints upon removing grease from the measuring instruments.

The chapter on indicators is a valuable portion of the volume, but it is to be feared that the paragraph on the iron hypothesis will not convey much to those who are not already familiar with the subject. The selection of methods is judicious and fairly complete, and, as is to be expected in a book written by a professor of a College of Pharmacy, we find instructions for the assay of crude drugs and of galenical preparations.

It is unfortunate, however, that no mention has been made of the employment of the volumetric solutions of potassium arsenites.

On the whole the book may be highly recommended.

J. J. M.

The Healing of Nerves. By CHARLES A. BALLANCE, M.S., F.R.C.S., Assistant Surgeon to St. Thomas' Hospital and Lecturer on Surgery in the Medical School; Surgeon to the National Hospital for the Paralyzed and Epileptic, Queen Square; Surgeon to the Hospital for Sick Children, St. Ormond Street; and PURVIS STEWART, M.A., M.D., M.R.C.P., Assistant Physician to the Westminster Hospital; Lecturer on Materia Medica and Pharmacology in the Westminster Hospital Medical School. Illustrated by 16 plates and one figure in the text. London: Macmillan & Co., Limited. New York: The Macmillan Company. 1901.

This is essentially an atlas and not an ordinary text-book. It is certainly a work of art, the colored plates being most delicate and illustrating the healing of nerve tissue at different stages and under different circumstances in a manner which conveys to the reader most effectively nature's methods in this connection. Plate I. is very beautiful. It shows (Fig. 1) the sciatic nerve of a cat divided and not sutured (24 hours), with the primitive end bulb of the proximal segment (x 50); Fig. 2, the same nerve at end of five days, with degeneration of medullary sheaths in distal segment; Fig. 3, immediate reunion at end of two weeks, showing the early formation of new sheaths in the lower end of central segment, and Fig. 4, the nerve at end of three weeks, showing well-marked spiral tubular plexus in lower end of proximal segment. There are in all sixteen plates, each one as beautiful as the first. The atlas is most instructive, and covers a ground hardly touched by any other writers. It sells at 12s. 6d. in London. We congratulate Dr. Stewart and Mr. Ballance on the excellence of their volume.

A Laboratory Hand-Book of Urinary Analysis and Physiological Chemistry. By CHARLES G. L. WOLF, B.A., M.D., Instructor in Physiological Chemistry, Cornell University Medical College, New York. Illustrated. Philadelphia and London: W. B. Saunders & Co. 1901. Canadian agents, J. A. Carveth & Co., Toronto. $1.25.

"The object of this book is to supply to students and practitioners of medicine a guide to a course in physiological chemistry, and the examination of the urine and the contents of the stomach." The author wisely refrains from giving a long list of tests of doubtful value, but selects the most reliable ones, and describes them in detail. For the detection of free hydrochloric acid in the gastric contents he recommends the usual aniline dyes, and also Gunzburg's well-known test, phloroglucin-vanillin. Ample instructions are given regarding test-breakfasts and the usual methods of securing stomach contents for examination by means of siphonage. The section on urinary analysis is very satisfactory. Simple methods for qualitative and quantitative analysis are given, and the microscopic appearances of the more common inorganic sediments are illustrated. A somewhat elaborate, but useful, table of urinary diagnosis is given. A. E.

The Four Epochs of a Woman's Life. A Study in Hygiene. By ANNA M. GALBRAITH, M.D., Author of "Hygiene and Physical Culture for Women;" Fellow of the New York Academy of Medicine, etc. With an Introductory Note by JOHN H. MUSSER, M.D., Professor of Clinical Medicine, University of Pennsylvania. 12mo volume of 200 pages. Philadelphia and London: W. B. Saunders & Company. 1901. Cloth, $1.25 net. Canadian Agents: J. A. Carveth & Co., Toronto.

For many decades it has been a well-known fact that one of the causes of, at least, the minor ailments of womankind is ignorance on their part as to nature's laws. How often does a family physician come across cases where he cannot but be surprised at the foolishness of those who ought to know better, but he accounts for many sicknesses by the fact that his patient simply did not know what would appear to him should come to her by natural instinct. Dr. Anna M. Galbraith, in her book, seeks to throw light upon many points which are as yet obtuse to the female sex, and the perusal of the volume will be the means of affording a natural cure to many a sufferer.

A Manual of Clinical Laboratory Methods. By JOHN BENJAMIN NICHOLS, M.D. New York: William Wood & Co.

The increased complexity of methods of clinical diagnosis has given rise to a host of text-books dealing with the practical

laboratory side of the question. Dr. Nichols' book does not differ much from many other similar works; in fact, as he says in the preface, it does not profess to present much that is new or original. Although the book is not very small (it contains nearly 300 pages), an attempt has been made to include too much matter, and consequently the descriptions of methods are somewhat too condensed. The methods of gastric analysis might, with advantage, have been given in greater detail and with fuller explanations, as these are methods with which the student and medical practitioner most frequently has trouble. It seems unnecessary, also, to include in such a book a chapter on the making of autopsies. Otherwise, the book is well written and a fair piece of bookmaking.

J. J. M.

The Technique of Surgical Gynecology. Devoted exclusively to a description of the technique of Gynecological Operations. By AUGUSTIN H. GOELET, M.D., Professor of Gynecology in the New York School of Clinical Medicine; Consulting Professor of Gynecological Electro-Therapeutics, International Correspondence Schools, Scranton, Pa.; Fellow of the New York Academy of Medicine, and of the New York Obstetrical Society, etc. Published by the International Journal of Surgery Co., Medical Publishers, 100 William Street, New York.

It is generally admitted that the ordinary work upon gynecology does not sufficiently go into detail on the subject of technique, the preparation of the patient for operation, the after-treatment of the patient, etc. This has been found fault with in our review columns in the past, and we think that it is a hint worthy of recognition, as there is no doubt that much of the success connected with any case is attributable to the manner in which the patient is attended to both before and after operation. We have gone through Dr. Goelet's book pretty thoroughly, and feel glad to offer our word of praise, as the volume is exceedingly practical, and will, we feel sure, be found valuable to every practitioner, whether he pays much attention to gynecology or not.

The Pocket Gray, or Anatomists' Vade-Mecum. By the late EDWARD COTTERELL, F.R.C.S. Fifth edition, revised and edited by C. H. FAGGE, M.B., M.S., London, F.R.C.S., Senior Demonstrator of Anatomy, Guy's Hospital. Twentieth thousand. New York: Wm. Wood & Co. 1901.

The anatomy of the human body is a subject which every practitioner must keep familiar with, and every day something crops up which shows the great necessity of this. It is of course impossible for one to carry round a volume like Gray's Anatomy with him, but a pocket edition of that splendid volume can be

made to fit into a corner of the satchel, and in that way be consulted according to requirement. Dr. Fagge has in the fifth edition so revised his "Anatomists' Vade-Mecum" that it will be found an exceedingly useful book, and is without doubt a *multum in parvo* to both physician and surgeon alike.

Manual of Physical Diagnosis. For the use of Students and Physicians. By JAMES TYSON, M.D., Professor of Medicine in the University of Pennsylvania and Physician to the University Hospital; Physician to the Philadelphia Hospital; Fellow of the College of Physicians of Philadelphia; Member of the Association of American Physicians, etc. Fourth edition, revised and enlarged. With colored and other illustrations. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. Canadian Agents: Chandler & Massey, Limited, Toronto. 1901. 12mo, cloth. $1.50 net.

Like all the writing of Professor Tyson, this is a safe and practical guide to physical diagnosis for those for whom it is intended. The book is creditable to the publishers. A. M'P.

LITERARY NOTES.

E. MERCK, the well-known manufacturer of fine pharmaceuticals, Darmstadt, Germany, will be pleased to send to any physician making application for the same a copy of his recent pamphlet, "Short Notes on Some of the Merck Products." The booklet gives useful particulars as to the properties and uses of Merck's special preparations.

JONATHAN HUTCHINSON, F.R.S., General Secretary of the New Sydenham Society, has requested Messrs. P. Blakiston's Son & Co., of Philadelphia, the American agents of the Society, to announce the publication of an "Atlas of Clinical Medicine, Surgery and Pathology," selected and arranged with the design to afford, in as complete a manner as possible, aids to diagnosis in all departments of practice. It is proposed to complete the work in five years, in fasciculi form, eight to ten plates issued every three months in connection with the regular publications of the Society. The New Sydenham Society was established in 1858, with the object of publishing essays, monographs and translations of works which could not be otherwise issued The list of publications numbers upwards of 170 volumes of the greatest scientific value. An effort is now being made to increase the membership, in order to extend its work.

THE DOCTOR'S DREAM.

Last evening I was talking
With a doctor, aged and gray,
Who told me of a dream he had,
I think 'twas Christmas day.

While snoozing in his office,
The vision came to view,
For he saw an angel enter,
Dressed in garments white and new.

Said the angel, "I'm from heaven;
The Lord just sent me down,
To bring you up to glory,
To wear your golden crown.

"You've been a friend to everyone,
And worked hard, night and day;
You have doctored many thousands,
And from few received your pay.

"So we want you up in glory,
For you have labored hard,
And the good Lord is preparing
Your eternal, just reward."

Then the angel and the doctor
Started up toward glory's gate,
But when passing close to hades,
The angel murmured, "Wait."

"I have here a place to show you;
It's the hottest place in hell,
Where the ones who never paid you
In torment always dwell."

And, behold, the doctor saw there
His old patients by the score,
And taking up a chair and fan,
He wished for nothing more.

But was bound to sit and watch them,
As they sizzle, singe and burn,
And his eyes would rest on debtors
Whichever way they'd turn.

Said the angel, "Come on, doctor,
There the pearly gates I see;"
But the doctor only muttered,
"This is good enough for me!"

He refused to go on further,
But preferred to sit and gaze
At that crowd of rank old dead-heads,
As they lay there in the blaze.

But just then the doctor's office clock
Cuckooed the hour of seven,
And he awoke to find himself
In neither hell nor heaven.

—G. A. Moore, M.D. Dunlop, Mo., in *Medical Herald.*