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Original Articles

SOURCES OF INFECTION IN TUBERCULOSIS AND THEIR PREVENTION.*

By George D. Porter, M.B.,
Associate Secretary of Canadian Association for the Prevention of Tuberculosis.

In the modern widespread crusade against tuberculosis the public hear so much about the social side of it, so much about it being a disease due to poverty, intemperance and dirt, that they are very apt to consider only some of these predisposing factors of infection, and lose sight of the infection itself. If emphasis (important especially in large cities, as it is) is always laid upon this phase of the subject people will soon become as ashamed to own to a case of consumption in their family as they would be to confess to some disease of more questionable repute.

Although tuberculosis is far more frequent in the slums, some of which are veritable hotbeds of infection, and although there is a much higher death rate from this disease amongst the overworked, the underfed and the intemperate, yet it is as true to-day as it was when Charles Dickens said of it that consumption "is a disease which wealth never warded off or poverty could boast exemption from."

It has been demonstrated that it is due to the bacillus tuberculosis, which we know finds its way into the homes of the rich as well as those of the poor, of the cultured as well as those of the ignorant, and of the temperate as well as those of the drunkard, for of the 12,000 whom Canada loses annually from this disease thousands are from her best people in the industrial, agricultural, commercial and professional walks of life.

This paper then is merely for the purpose of briefly summariz-

*Read at Canadian Medical Association, Winnipeg, August, 1909.

ing what are now believed to be the common and most frequent sources of infection, with the precautions to be taken against them; for it is the privilege of the medical profession to lead in the great work of educating the public regarding preventative measures, just as it is a physician's duty to use his best therapeutic skill in treating those individual cases which come under his care.

The tubercle bacillus does not travel by the placental route as frequently as we were formerly led to believe it did, and it seldom arrives by the cutaneous route, but its invasion is generally by way of the alimentary canal or the respiratory tract.

The sources may be *direct* from animals to man by the ingestion of diseased meat and infected milk.

It may be *direct* from man to man, when one affected with open pulmonary tuberculosis coughs, sneezes, laughs or talks loudly into the face of another, or if he kisses another on the lips.

It may be *indirect* from man to man by the ingestion of food contaminated by the soiled hands of tuberculous cooks or others preparing it; by the bacilli from dried sputum, soiled table napkins, cups, dishes and eating utensils handled or coughed upon by careless consumptives. Also from whistles, mouth organs, pencils and coins passed from the mouths of tuberculous children to those of others.

Infants have been infected by tuberculous nurses and mothers repeatedly tasting their food before giving it to them. Flies also carry the bacilli over food and drink.

Then we have indirect infection through repeated and long-continued inhalation of the infected air in rooms, shops, cars and public halls, where the bacilli from dried sputum, soiled dressings, handkerchiefs, bed linen or towels are disseminated. Books also are liable to carry infection.

Although we should use every effort to have untainted meat and a pure milk supply, yet, while awaiting these, the householder may avoid infection through diseased meat by properly cooking it, and she may protect her children, who are in danger of being infected from impure milk, by pasteurizing that. (A simple method of pasteurizing milk is by immersing the bottles containing it for one-half hour in a covered pail of water which has been brought to a boiling point and then allowed to cool for five minutes beforehand. Then the bottle should be immediately placed in cold water or on the ice, there to be left and covered until ready for use.)

Direct infection from man to man is that most commonly feared by the public, and yet it is probably the least frequent source of all. for tuberculosis is not as contagious a disease as is measles or whooping cough. According to the British official report at the

Congress held last year in Washington, "it is a slightly communicable malady" and "the element of infection has been somewhat overrated," according to the report of the Committee on the Prevention of Tuberculosis of State Charities' Aid Association of the State of New York. "Numerous investigations have shown that prolonged and repeated exposures are necessary to cause tuberculosis in a healthy person." This, however, should not delude us, for a large number of persons are unhealthy and a great many are being almost constantly exposed to the infection. About three or four feet probably marks the limit of the danger zone of droplet infection from a case of open tuberculosis. This may be avoided by having the patient cover his mouth when coughing. Consumptives should not kiss others (especially children) on the lips.

Indirect infection from man to man is probably the most frequent source of all, and yet the one which is most ignored. This may be largely avoided by burning all dressings, the disinfection by boiling (before being put in the general wash) of all handkerchiefs and linen used by consumptives. They should use separate dishes, knives, forks and spoons, which should be thoroughly scalded after use. They should sleep alone in a separate bedroom, free from carpets, curtains and upholstered furniture, and this room should be swept and dusted with moist brooms and cloths. They should use separate towels, and have their hands and face always kept scrupulously clean.

Books used by them should afterwards be disinfected or destroyed. All food should be covered or screened from flies.

Patients should use burnable sputum cups, cloths or paper napkins, which can be thrown in a paper bag and burned, or else covered receptacles, which are to be frequently disinfected. All sputum must be destroyed, and there should be disinfection of all dwellings after the death or removal of a consumptive.

Finally, all dwellings, schools, offices, shops and public buildings should be properly ventilated, for next to the proper care of infective cases nothing will prevent the spread of tuberculosis more than will abundance of light and fresh air in those places in which we live (and the same holds true for our cattle), for sunlight quickly destroys the bacilli and proper ventilation purifies the vitiated and oftentimes polluted inside atmosphere, while nothing yet known so greatly increases the resisting powers of the individual against the invasion of this insidious disease as does the continuous breathing of God's good fresh air.

455 Huron Street, Toronto.

A SUCCESSFUL CASE OF CAESAREAN SECTION.

By J. P. Kennedy, M.D.
Surgeon to the Wingham General Hospital.

The patient, Mrs. C., aged 31 years, of Star City, Saskatchewan, consulted me at my office June 25th, 1909.

Personal History.—Has always been healthy, never having had any severe illness. When about 3 years of age had weak ankles, but no history of rachitis. Began to menstruate at 12 years of age, always painful. Six years ago she had an abdominal operation in Montreal, the nature of which I do not know. She says: "The uterus was straightened and cysts of ovaries punctured." Five years ago I did a dilation and currettage for dysmenorrhoea. Since then her periods have been without much pain. Shortly after this she moved to Saskatchewan.

Marital History.—Married 11 years ago. She became pregnant in May, 1908, but miscarried at 2½ months. Periods were then regular until February, 1909. She menstruated last February 11th, 1909. In the West she was informed that she was pregnant, but that it would be impossible for her to give birth to a living child at full term. When she consulted me on the 25th of June I found her pregnant, and a contracted pelvis with the following measurements:

Interspinous 21 cms.	Interischial 7 cms.
Intercristal 25 cms.	Pubo-sacral 10 cms.
Extr conjugate 17.5 cms.	Diagonal conjugate 9 cms.

I decided to keep her under observation and await the onset of labor, thinking, perhaps, that, if the child were small and presentation normal, she might be delivered *via naturales*.

She had no untoward symptoms during her pregnancy. I had expected her to be confined along about the 18th to 20th of November. Beginning labor was delayed, however, until the 26th of November. On the evening of that day I was telephoned for and saw her about 8 p.m. I found that she had been in labor for eight hours. A vaginal examination showed little, if any, dilatation of the cervix. At 11.30 p.m. there was slight dilatation, although pains were getting severe. At 5 a.m. next day, as pains were very severe, with little dilatation of the cervix, and as the head had not engaged in the pelvis, I decided to wait no longer, but to act,

while patient was in fair condition and strong. I accordingly had her removed at once to the Wingham General Hospital and prepared for Caesarean section.

Operation.—An incision 6 to 7 inches long was made in the median line—from above the umbilicus downwards. The abdominal wall, as is usual in such cases, I believe, was exceedingly thin. A specially long gauze roll was now packed in between the everted lips of the abdominal incision and the fundus uteri to protect the abdominal cavity. One of my assistants now pressed the abdominal wall firmly against the sides of the uterus. A vertical incision was now made into the uterus, from the fundus downwards, of about the same length as the abdominal incision. This was carried right through the uterine wall. As the placenta presented, instead of pushing it to one side, I went right through it, grasped a leg, and extracted the child. Dr. Hutchison now clamped the cord with haemostats, cut it, and I handed him the baby. He and Miss King, the patient's special nurse, took the child in charge, resuscitating it quite readily. Although the operation thus far had taken only four minutes, the hemorrhage had been very free. As soon as the child was delivered my assistant, Dr. Margaret C. Calder, grasped the broad ligaments and cervix, which controlled the hemorrhage temporarily, and at the same time brought the uterus outside the abdominal incision, a large sterile towel being placed behind the uterus, separating it from the towels covering the abdominal wall, which were now, of course, saturated with blood and liquor amnii. I now extracted the placenta, being careful to grasp it on the foetal surface. The uterus contracted at once. I inserted deep interrupted No. 3 chromocized catgut sutures. This practically controlled the hemorrhage. Half deep or superficial interrupted catgut sutures were inserted between these, and the peritoneal surfaces over the entire wound were brought together by a continuous suture analogous to the intestinal Lembert suture. The surface of the uterus and broad ligaments were sponged clean and the uterus replaced. The abdominal wound was closed by means of a continuous fine catgut suture for the peritoneum, interrupted silkworm gut sutures being employed to bring together the fascia, overlying structures and skin. The entire operation took 36 minutes. I am indebted to Dr. J. E. Tamblyn for giving the anesthetic, and my thanks are especially due to my assistant, Dr. Margaret C. Calder, and our excellent Hospital Superintendent, Miss J. E. Welsh, who so ably assisted me in the operation. The child, a boy, weighed 9½ lbs., with the following measurements:

Head—Ant. post. 11.5 cm.; transverse, 9.75 cm.; shoulders, 11 cm.

Hips, 10 cm.
Circumference of head, 37 cm.
Length of body, 49.5 cm.

The after history of the case was uneventful. Patient's temperature on the third day reached 101 degrees, but after the bowels were moved it remained normal, or nearly so. There was primary union of the abdominal incision. Patient nursed baby from the first. She was out of bed on the 18th day and left the hospital on the 25th day. Both baby and mother have continued well ever since. When a month old the baby weighed 12 lbs.

The inside of the uterus was not sponged, swabbed out or touched in any way. Nor was the abdominal cavity washed out. The large gauze roll packed around the uterus and between the everted lips of the abdominal incision, together with the pressure of these edges against the uterus by my assistants, prevented the entrance of either blood or liquor amnii into the abdominal cavity. A hysterectomy was not considered, nor did I attempt to sterilize the patient by ligating and sectioning the tubes, as I had no permission to do either. I do not believe that there would be any more risk in doing a second Caesarean section on this patient than there was in doing the first, provided it were done at the proper time and under suitable surroundings. I know of a woman, the wife of a millionaire in Boston, who has had a Caesarean section performed three times successfully.

Medicine

GRAHAM CHAMBERS, R. J. DWYER, GOLDWIN HOWLAND, GEO. W. ROSS, WM. D. YOUNG.

Gastric Ulcer. C. F. HOOVER, *Cleveland Medical Journal.*

To treat a gastric ulcer rationally careful consideration must be given to the pathogenesis of the ulcer. Clinically it is possible to determine whether one is dealing with a peptic, perforating or an ulcer of some other origin. It is doubtful if trauma alone will account for any round ulcer of the stomach, and if it does occur long after the injury hyperchlorhydria accompanies. When not syphilitic, tuberculous or of the peptic variety, recovery is prompt; as soon as the bleeding ceases the patient can be given vegetable puree, scraped meat, eggs and milk. One has to remember when dyspepsia, pain and hemorrhage occur in elderly people with arterio-sclerosis that it cannot be assumed these are the result of an erosion. Hematemesis sometimes occurs in typhoid fever and pneumonia. Hoover divides these cases into three groups from his own clinical experience: first, syphilis; second, chronic peptic ulcer in patients who show no signs of congenital asthenia; and third, chronic peptic ulcer occurring in patients with congenital asthenia. In connection with the treatment of the former, he points out the tolerance of the stomach for only small doses of iodide of potash. In married women care should be exercised in the diagnosis, as they rarely give a history of syphilis, often coming by it innocently. Hemorrhage is rarely fatal in gastric ulcer. Gelatine in tablespoonful doses, 5% sterile solution, Hoover has used, but is doubtful of its service. Adrenalin is a rational drug to employ. It acts as a styptic and diminishes glandular secretion. He is doubtful of the efficacy of an ice bag to the epigastrium. Morphia hypodermically as a sedative is liable to produce watery greenish vomit. When bleeding is severe all solids and liquids should be withheld and water by enemata to allay thirst. For pain orthoform, in 7-grain doses, three or four times a day, but this is only serviceable when the irritating cause of the pain is accessible from the inner surface of stomach. For a protective coating 30 to 60 grains of bismuth subnitrate or carbonate; but on account of dark color to stools equal parts of prepared chalk and talcum, one-half to a full teaspoonful in three ounces of water before food, may be preferable.

G. E.

Surgery

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

Pus Tubes in the Male. WILLIAM T. BELFIELD, *M.D.*, Chicago. *Jour. Am. Med. Assn.*, Dec., 1909.

This is a short paper on pus infections of the male seminal duct. Since the ampulla and vesicle are closed by a sphincter of smooth muscle, liquids injected into the vas enter and distend the vesicle before they escape into the ejaculatory duct. If the ejaculatory duct be obstructed, by inflammatory swelling or other cause, and pus accumulates in the vesicle, the contractions of the vesicle will force the pus up the vas, and it will arrive at the epididymis. Thus pus infection of the vesicle, plus occlusion of the ejaculatory duct, converts the entire seminal duct into a closed abscess.

Since the vesicle is in close contact with the base of the bladder and ureter, inflammation of the vesicle often produces symptoms of chronic cystitis, such as irritable bladder. Adhesions between the base of the bladder and the seminal duct will often produce the symptoms of "prostatism without enlarged prostate."

Adhesions between the vesicle and ureter may obstruct the ureter and cause kidney and ureter disease.

Renal pain, "lumbago" or "nephralgia," is often produced by distended vesicle. For the treatment of the distended vesicle and seminal duct, vasostomy is advocated. The technic of the operation is described in the *Journal of the A. M. A.*, April 22nd, 1905.

W. A. S.

Surgical Treatment of Tuberculosis, Pleurisy, Lung Abscess and Empyema. EMIL G. BECK, M.D., Chicago. The *Journal of the A. M. A.*, Dec. 18th, 1909.

The paper deals with the various methods of diagnosis, laying stress on the radiograph. It then passes on to surgical treatment. The pleuritic effusion is merely a symptom. The effusion is conducive to healing of the tuberculous process in the lung, and should not be removed unless to relieve some symptom, such as urgent dyspnœa, high blood pressure or other disturbance of the circula-

tion requiring immediate relief. In such cases remove only enough to relieve the symptom.

Various methods are described to compress the lung, with a view of promoting healing in the tuberculous focus.

In cases of empyema the treatment employed has been to inject into the cavities a paste made of bismuth subnitrate 33%, and vaseline 67%. This treatment has been employed since 1907, and in all, 10 cases of empyema and 3 of lung abscess are reported here.

The causes effecting the healing process are discussed, and the technic in chest cases described. W. A. S.

Seventy-Five Cases of Trifacial Neuralgia Treated by Deep Injections of Alcohol. HUGH T. PATRICK, M.D., Chicago. *Journal of the A. M. A.*, Dec. 25th, 1909.

The technic is described in the *Journal of the A. M. A.*, Nov. 9th, '07. Here there is a report of the cases in which it has been used. The method is simple, and is free from serious danger; it requires no anesthetic, and the results are remarkably encouraging.

W. A. S.

The Transperitoneal Operation for the Removal of Bladder Neoplasms. E. S. JUDD, M.D., Rochester, Minn. *Journal of the A. M. A.*, Dec. 25th, 1909.

The technic of the operation is described in detail, and illustrated by five cuts. The method has been used 15 times, with one death. It is not advised nor deemed necessary to go through the peritoneum in removing tumors in the upper quadrants of the bladder, but since the greater number of tumors of the bladder begin in the region of the base, a much more radical operation can be done by this method, with little greater risk to the patient.

W. A. S.

Obstetrics

CHAS. J. C. O. HASTINGS, ARTHUR C. HENDRICK.

Traumatic Perforations of the Uterus from Within. HEINRIK (A. P.), Chicago. *Medical Standard.*

The chief predisposing causes to this accident are either hyperemia of the uterine tissues following abortion or labor; and atrophy, due to some wasting disease, such as tuberculosis, or after puerperal infections.

Malignant growths of the uterus also favor the accident, as also does abscess of the uterus, chiefly the ordinary pyogenic variety.

As regards treatment of such an accident, if one is quite sure that the uterus and the instrument are both aseptic, nothing need be done except to keep the patient quiet for two or three days, and carefully watched in regard to temperature, pulse, etc. If the injury has been done by a curette, nothing may happen.

However, if the interior of the uterus is septic, it seems better to perform laparotomy and explore the wound and adjoining viscera, and then suture the wound of the uterus.

ARTHUR C. HENDRICK.

THE presence of shreds in the urine is a presumptive evidence more useful to the surgeon who seeks the etiology of a monarticular inflammation than is the denial by the patient that he has had gonorrhea.—*American Journal of Surgery.*

IF there is reason to believe that one is dealing with a subacromial bursitis, the presence of great tenderness on pressure over the humerus in the axilla should not be interpreted to gainsay the diagnosis—although such tenderness has not been described.—*American Journal of Surgery.*

Ophthalmology

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

Milton's Blindness. By PROF. M. DUFOUR (*Ophthalmoscope*, September, 1909).

Milton, writing Philaros, a Greek diplomat, living in Paris, described his symptoms of failing vision. Whilst looking at a torch he would see a halo round the flame. To begin with, he noticed, on the left side of his left eye, a shadow, which hid from him all objects placed on that side. In shutting his right eye, the objects placed in front of the left eye seemed smaller. The shadow finished by obscuring completely the vision of the left eye. After this, during three years the sight of the right eye slowly and gradually grew dim. Before entirely losing his sight the motionless objects he looked at appeared to float about. Obstinate steam seemed to hang about his forehead, and as soon as he lay down, either on his right or left side, a brilliant light shone before his closed eyes. As by degrees his blindness increased, ever darker-growing colors troubled him; they finally settled in an ashen blackness. This cloud, in which he was enveloped day and night, was more like dawn than night; when he moved his eye it still received a faint light, as if through a crack. It took about eight years for him to become completely blind, from 1644 to 1652. In 1654 Milton, in a sonnet to his friend Cyriac Skinner, writes:

> "Syriac, this three years day these eyes, though clear,
> To outward view, of blemish or of spot,
> Bereft of light their seeing have forgot,
> Nor to their idle orbs doth sight appear
> Of sun, or moon, or star throughout the year,
> Or man, or woman."

From these statements Prof. Dufour deduces the following facts:

1. A dimness of the visual field, coming on first on the left side and then at the top; the sensation of steam before the eyes showing the well-known picture of the narrowing of the field from above.
2. The deformed character and mobility of the objects.
3. The subjective sensations of light, which persist even after the loss of sight.

He therefore concludes that these symptoms lead to the conclusion that Milton had progressive myopia and detachment of retina and that a causative factor was the intensity of his studies and of his work, for between the years 1639 and 1656 he wrote no less than fourteen books. W. H. L.

Syphilis of the External Eye. By CASEY WOOD. *Interstate Medical Journal.*

Dr. Wood discusses briefly syphilis of the eye. In the treatment of interstitial keratitis he believes more in careful hygienic measures, such as fresh air, exercise, tonics, good food, etc., than in the use of specific treatment such as Hutchinson and other authorities advise. He also insists upon careful examination of the cornea for vascular outlines, by means of a lens, to diagnose the cause of corneal opacities which may have been due to interstitial keratitis. W. H. L.

Indications for Extirpation of the Lachrymal Sac. WYLER. *Ophthalmology,* October, 1908.

Wyler, in discussing extirpation of the sac, sums up four chief indications:

1. Old dacryocystitis, with changes in the walls and more or less severe ectasia.
2. Flow of pus, which has been handled by other methods for a time without results, particularly in the laboring classes.
3. Complicated with corneal ulcers on the same side.
4. Preceding intra-ocular operation. W. H. L.

A Fatality following Discission of Cataract. By PHILIP A. HARRY, Leeds. *Ophthalmoscope,* October.

Dr. Harry reports a case in a girl, aged 13 years. The patient had glycosuria, but it was thought that such a trifling operation as "needling" would not be contra-indicated, as the operation was to be done under local anesthesia. Unfortunately, however, in a day and a half after operation, the temperature dropped to 97, the pulse became 166 and rspiration 20, accompanied by delirium. This was followed by coma and death within 48 hours.

W. H. L.

Cataract after Electric Shock. *Ophthalmoscope* for October.

A case is reported in which a young man, aged 28, developed a complete cataract in the left eye within eighteen months after he had sustained an electric shock of 2,800 volts. It is also of interest to note that he was deaf on the same side for four months.

W. H. L.

Traumatism and Interstitial Keratitis.

Ronnaux reports two cases in which typical interstitial keratitis followed injury of the eye. In one case the traumatism was contusion, and in the other the injury was a foreign body. In both instances the patients showed signs of hereditary syphilis, and in both the recovery from the attack was very slow. W. H. L.

Rhinology, Laryngology and Otology

GEOFFREY BOYD, GILBERT ROYCE.

Tracheotomy for Foreign Bodies in the Air Passages: Based upon Fifty-Three Successful Cases. By W. F. WESTMORELAND, Atlanta, Ga. *American Journal of Surgery.*

The author strongly condemns the practice of using the tracheotomy tube in cases of foreign body in the air passages, and says that it only obstructs and irritates. He advocates early operation when the field is free from infection and the chances of uninterrupted recovery greater. If the body is coughed out at the operation and there is no infection, he closes the opening at once, otherwise the wound is left open until all signs of infection disappear. G. R.

Spoon Enucleation of the Tonsil. By E. MORGAN MCWHINNIE, Seattle. *American Journal of Surgery.*

In this article the author describes a method of removing the tonsil in its capsule by means of a special instrument which he has devised. He states that he has found less hemorrhage attending total tonsil extirpation than in the ordinary amputation, and explains it as being due to the non-contractility of the fibrous capsule, so that the vessels are not closed off. On the other hand, the connective tissue external to the capsule does contract. G. R.

IF one fails to quiet a frightened, crying child sufficiently to determine the presence of a tender area, necessary to diagnosis, the administration of chloroform to the point of *primary* anesthesia will make the examination easy, and, at this state of narcosis, pressure on a tender spot will be answered by reflex movements.—*American Journal of Surgery.*

Gynecology

F. W. Marlow, W. B. Hendry.

Dilatation of the Female Urethra. By Thomas Bray Spence. *American Journal of Surgery.*

Spence, of Brooklyn, N.Y., reviews the various operative procedures that have been used for the relief of the incontinence of urine accompanying this condition, which, though it may be brought about by any form of stretching, is most frequently the result of traumatism incident to child-birth, and is often associated with cystocele and a relaxed vaginal outlet. His own method of operating, for which he claims considerable success, consists in a sagittal denudation or resection of that part of the anterior vaginal wall in apposition with the urethra, followed by deep and superficial suturing of the edges across the urethra in order to compress it. He also finds it necessary in many cases to repair the vaginal outlet.

F. W. M.

Tumor of the Large Intestine Simulating Disease of the Uterus or Uterine Appendages. By Victor Bonney. *The Lancet*, Aug. 21, 1909.

Dr. Victor Bonney gives some interesting reports of cases in which masses apparently arising in the pelvic organs were at operation found to be the result of an inflammatory or malignant condition involving some part of the large intestine, notably the caecum, the transverse colon and the sigmoid colon. He calls attention to the effect of gravity in lowering the situation of tumors of the movable parts of the colon and points out that the omentum usually becomes adherent and forms a considerable portion of the tumor, and it is undoubtedly true that diagnosis is difficult when such tumors are adherent to the pelvic organs, and especially when bowel symptoms are absent.

One can recall an occasional case of a similar kind, and notably a recent one in which one assisted Dr. J. F. W. Ross in resecting a considerable portion of the ilio-pelvic colon for the removal of a large inflammatory mass simulating a tubo-ovarian abscess, but in reality the result of diverticulitis. The patient was a woman recently confined and made a good recovery.

F. W. M.

Cancer of the Cervix Uteri. By JOHN A. MCGLINN. *New York Medical Journal*, July 31, 1909.

Dr. John A. McGlinn, of Philadelphia, has published a paper on the frequency of cancer of the cervix uteri. He quotes various statistics to show the alarming frequency of this condition, and also the support of his statement that cancer as a disease is showing a decided increase. The salient points of the paper are as follows:

1. Cancer of the uterus is the most common form of cancer in females—22.5 per cent. is the frequency given in England's statistics for 1900, and 27.68 per cent. is that of the United States for the same year.

2. Many observers contend that, taking cancer as it affects both men and women, the uterus is the most frequent site of the disease, the proportion given being somewhat less than one-third of all primary cancers, the stomach being next in order, with about one-fifth. Dr. McGlinn does not agree with this and reverses the order, placing stomach before uterus.

3. In England between the years 1847 and 1861 about 25,000 women died from cancer of the uterus.

4. Spencer has shown that in England and Wales during the years from 1901 to 1905, 19,645 women died of cancer of the uterus, that is an annual mortality of about 4,000 from this cause alone.

5. Cancer of the uterus causes the death of almost as many women as child-bearing, and perhaps more, and as the disease is by far the most common in cervices of multiparae, the great majority of women dying from such a cause are mothers of large families.

6. The proportion of deaths amongst women from cancer of the uterus is stated to be about one in thirty past the age of 35 and about one in ninety at all ages.

7. Registration of deaths has shown a gradual increase in the number of deaths from cancer of the uterus in the past decade.

8. Its greatest frequency is between the ages of forty-five and forty-nine, gradually increasing up to the former age, and decreasing after the latter.

9. Cancer of the body of the uterus develops as a rule later in life than cancer of the cervix and has a longer duration. The length of life in cancer of the cervix is usually given as two years, while in cancer of the body it is thirty-two months.

F. W. M.

Surgical Treatment of Retrodisplacements of the Uterus. By C. A. STEWART. *American Journal of Surgery.*

A brief but pointed and valuable paper on this subject by Dr. C. A. Stewart, of Duluth, Minnesota, appears in the *American Journal of Surgery*, August, 1909. Dr. Stewart wisely states that in uncomplicated cases in which there are no symptoms save perhaps those of a neurasthenic or neurotic type, the local condition does not call for treatment and is better to be ignored. When, however, there is backache, leucorrhea, vesical irritation, constipation, dysmenorrhea, menorrhagia, and perhaps sterility, the condition usually calls for operative treatment, as no palliative measures are of any particular good so far as permanency is concerned. His plan of procedure is to shorten the round ligaments. In cases where there are no adhesions to the uterus he uses the method of Alexander, whilst in other cases his operation is intra-abdominal and consists in a looping of the elongated ligaments, shortening the anterior peritoneum of the broad ligament, fixing the base of the outer limb of the loop to the uterine cornu so as to preserve its point and direction of traction and uniting the two loops in front of and to the front of the fundus of the uterus.

In cases of acute retrodisplacement the result of a fall or other injury, in which the round ligaments have not suffered from long-continued overstretching, the reposition of the uterus and the temporary use of a retentive pessary is as a rule all that is required to afford relief.

Extrauterine Pregnancy. DR. BLAND, of Philadelphia. *American Journal of Surgery*, December, 1909.

Dr. Bland reviews briefly and concisely the subject of extrauterine pregnancy. The paper is full of interest, though nothing new of importance has been introduced.

Dr. Bland states that cessation of menstruation occurs in about one-half of the cases. This one considers to be rather a low estimate, and in practically all cases where one or more periods have not been missed, a very careful enquiry will elicit some slight departure from the normal menstruation, characteristic of the patient. In discussing the diagnosis before rupture one of the most important signs is omitted, namely, that the localized swelling in the tube may be felt apart from the ovary.

One cannot agree with the statement that the uterus is usually crowded to the opposite side by an unruptured gravid tube, since rupture usually occurs before the mass is large enough to affect the position of the uterus. Dr. Bland's statement, without qualifica-

tion, that "the diagnosis of ectopic gestation prior to rupture is often accidental, and frequently, when the diagnosis has been made, the operator finds the mass in question to be either an inflamed tube or a small cystic ovary," is open to criticism. No experienced abdominal surgeon should make such an error, for in case the ovary is cystic the tubal mass should be felt apart from it, and when one fails to recognize an inflamed tube it is usually because sufficient time and care are not expended in the history and examination of the case. To mistake an acute salpingitis for a tubal pregnancy is almost an unpardonable error, since the operation may and is likely to be followed by most serious consequences.

Deserved emphasis has been given to the necessity of careful manipulation in all cases where ectopic pregnancy is suspected or is probable. One can recall several cases where severe internal bleeding has followed the examination of such patients for diagnosis.

"That the mass is more or less pulsatile" one has rarely observed, and the statement is apt to cause practitioners to seek something which they will rarely find. The pulsation is from the enlarged amastomotic arterial circle.

As to vaginal section in such cases, Dr. Bland uses it as an aid to diagnosis "in all cases where haste is not demanded." Such a procedure is seldom necessary, and, like exploratory laparotomies in general, puts a ban upon careful diagnosis.

In discussing the operation, Dr. Bland states that as a preliminary procedure he incises the posterior vaginal wall and that in his recent cases he always establishes posterior vaginal drainage, though his operation is abdominal. Either one of these procedures is quite unnecessary when the abdominal operation is performed, and the vaginal section and change of posture would often consume too much valuable time in urgent cases. Drainage is quite unnecessary, as it is quite possible and desirable to remove the blood and clots by careful, copious irrigation and cleansing of the pelvic, and, if necessary, the abdominal cavity, by normal saline solution. An almost moribund patient will show signs of improvement as soon as such irrigation is begun, after the tube has been secured. Besides this, the removal of blood and clots by vaginal drainage would be difficult to accomplish. The statement that "the treatment of a ruptured ectopic gestation sac with hemorrhage into the folds of the broad ligaments is the same as the method described for intervention in intraperitoneal rupture" is hardly consistent with the value of the paper as a whole, for the occurrence of extra-peritoneal rupture is exceedingly rare, and if it does occur a harmless haematoma of

the broad ligament is the likely result, and, should operation be required, the case would present a very different aspect to one of intra-peritoneal rupture. F. W. M.

Tumors of the Female Urethra. Dr. Hirst, *American Journal of Surgery*, December, 1909.

Dr. Hirst reports some rare cases of tumor of the female urethra, amongst which three were maliguant, two carcinomata and one sarcoma.

His observations affirm the necessity for careful microscopical examination of all such tumors.

The ordinary urethral caruncle is, as a rule, easily recognized, but the occasional recurrence of one after removal may be misleading. This is also true of the infective granulomata that are prone to form at the urethral meatus. F. W. M.

Anesthetics

SAMUEL JOHNSTON, M.A., M.D.

The Administration of Nitrous Oxide With Oxygen as an Anesthetic. By CHARLES K. TETER, D.D.S., of Cleveland, O. *The Journal of American Medical Association,* June, 1909.

He has a record of thirteen thousand successful administrations, covering a period of nine years, "for practically every kind of an operation to its completion, under varying degrees of hasard, and varying in time from a few minutes to three hours."

The medical profession have been slow in adopting this combination of anesthetic for general surgery owing, mainly, to three factors: (1) An imperfect apparatus. (2) Lack of skill in its administration. (3) The expense.

The effects of the two gases on the organism are considered. The inhalation of oxygen is acknowledged by all to be beneficial, in that it influences the quality of the blood by increasing the number of red corpuscles, and clinically effects a marked improvement in the patient.

Nitrous oxide on entering the lungs is distributed throughout the alveoli and passes into the lymph. Its contact with the delicate nerve cells causes a temporary cessation of their functional integrity. The most highly organized centres are first affected, but gradually all succumb, until the respiratory and cardiac centres are paralyzed.

When the gases are warmed the patient passes into the anesthetic state more quickly and quietly, the narcosis is deeper, relaxation more complete, and cyanosis more entirely absent. Besides, the post operative bronchitis and pneumonia are less likely to occur.

The rapidity of elimination and return to consciousness depend on the freedom of the air tract from obstruction, as the elimination takes place principally through this tract.

On the withdrawal of the anesthetic the alveolar tension falls below the blood tension, and elimination commences.

If good respiration and circulation are present on the withdrawal of nitrous oxide and oxygen recovery takes place in a very few minutes.

The patient will show symptoms of recovery within sixty seconds

after a profound anesthesia, which may have lasted two hours, and will be conscious within three minutes. Of course with poor circulation and respiration recovery will be much slower.

Mr. Teter has used nitrous oxide with oxygen many times as the anesthetic throughout, with many different kinds of laparotomies, as well as Cesarean section, prostatectomy, radical operations, varicocele, amputations of breasts and extremities, and also a large number of thoracentesis.

He considers it an ideal anesthetic for the operation of thoracentesis, as a small amount of nitrous oxide will produce anesthesia and a large percentage of oxygen can be given to the starving lung.

In brain surgery, while nitrous oxide anesthesia with air produces distinct asphyxial symptoms, with oxygen these symptoms are quite overcome. One of the main objections to nitrous oxide with oxygen, as the anesthetic in major surgery, is the rigidity sometimes encountered.

Dr. Teter says about 10 per cent. of the patients cannot be relaxed.

Not caring to resort to other general anesthetics for this ten per cent., he has used numerous drugs before and during anesthesia.

The best results have been obtained when 1-4 to 1-8 gr. morphine sulphate, with 1-100 to 1-150 gr. atropine, were given hypodermically one-half hour before the operation.

He does not advise the use of morphine as a preliminary to nitrous oxide and oxygen in the hands of a novice, or one of little experience with this anesthetic agent, as respiration is more apt to cease, which is the tendency under nitrous oxide.

A perfect working apparatus is essential to properly administer nitrous oxide and oxygen. There should be four cylinders attached, two of each gas, so that when one cylinder is exhausted there should be no time lost in turning on the other one.

There should be means of warming the gas, so that it is warmed when it is inhaled.

All channels from the bag to the inhaler should be large and unobstructed.

There should also be an attachment so that varying percentages of ether can be administered in combination with nitrous oxide and oxygen, or in sequence.

The apparatus also should be of a portable nature, so that it can be easily carried from place to place.

The principal danger of nitrous oxide and oxygen anesthesia is that of asphyxiation.

The asphyxial element entering into the anesthesia is due to

the necessity of administering nitrous oxide almost in its pure state, in order to bring about that degree of saturation necessary to produce anesthesia, and is also influenced by the susceptibility of the patient, freedom of respiration, reflex effects of the operative manipulations, and the skill with which the nitrous oxide with oxygen is being administered.

There is another condition which very occasionally occurs, that is, tetanic cramps in the hands, arms, feet and legs. This condition has occurred mostly in short cases, and on recovery the patient experiences some pain in the parts affected. Blood pressure is slightly raised during nitrous oxide and oxygen anesthesia, but this is influenced greatly by the asphyxiation which accompanies it.

Among the chief advantages, that of freedom from nausea and vomiting is the most important. This freedom, however, will depend to a great extent on the evenness of the narcoses produced, preparation of the patient for the anesthetic, and purity of the gases. With these conditions fulfilled nausea and vomiting will be a rare occurrence.

In Dr. Teter's reply, regarding the discussion of this paper, he declared he did not advocate one anesthetic for every condition, nor does he think that an anesthetist is fully capable unless he can give any anesthetic and recognize when a change would be beneficial.

He advocates the taking up of anesthetics as a specialty and sticking to it. He criticizes the medical man for considering it beneath him to confine himself to anesthetics, stating that the result shows anesthetics are at the same place, one might say, that they were thirty years ago. The surgeons are all looking for the skilled anesthetist, and patients, when they understand it, as a rule, are willing to pay a skilled anesthetist his fee.

S. J.

Clinical Observations upon the Administration of Nitrous Oxide and Oxygen for Surgical Anesthesia. By DR. C. B. PARKER, Cleveland. *Cleveland Medical Journal.*

Dr. C. B. Parker, Cleveland, read this paper before the Academy of Medicine of Cleveland, which was based upon observations made in 218 operations, performed under nitrous oxide gas with pure oxygen.

Nearly all were major operations on patients suffering from organic disease of heart, lungs, and kidneys; wasting and suppurative conditions; asthmas, diabetes, alcoholism; the very old and the very young; those who had developed alarming symptoms in previous attempts at anesthesia with ether and chloroform.

The Teter apparatus was used in all cases.

In the administration of this combination there is no stertorous breathing, extreme muscular rigidity, drooling, or lividity. The smallest quantity of oxygen, 2 or 3 per cent., overcomes these symptoms.

The administrator seeks to regulate the depth of the anesthetic by the amount of oxygen, while the flow of nitrous oxide is even and continuous.

There are three well-defined stages, as in other narcosis. In the third stage the breathing is deep and tranquil, pulse strong and rapid, and the patient's appearance good, like that of a tired person in a deep sleep.

There was also observed: Complete muscular relaxation, absence of conjunctional reflexes, deep, tranquil breathing, and pupils usually normal.

The following are mentioned as objections to this anesthetic:

(1) Cyanosis—the blood is dark, and rather startling to the surgeon, which he soon learns, however, to overlook.

(2) Muscular rigidity—more frequently seen in young and vigorous subjects. However, one cannot predict in what case it will appear. A preliminary hypodermic of morphine and atropine 30 minutes before operation has diminished these cases.

(3) It takes a specialist to administer the anesthetic successfully.

(4) The expense—the materials and apparatus are more expensive than those of any other general anesthetic.

Some of the advantages observed were:

(1) The greater safety in all diseases of the heart, kidneys, etc., all exhausting diseases, alcoholism, and anemia.

(2) It is the most agreeable anesthetic. There is no vomiting, or it is only slight, as the patient recovers consciousness. In no case did prolonged vomiting occur.

(3) The period during which the anesthetic is exhibited is shortened from 5 to 15 minutes. After the nitrous oxide is withdrawn, oxygen is continued, and the patient returns to consciousness within two or three minutes.

(4) It is a boon for those who have once taken ether and dread a repetition of their disagreeable sensations. S. J.

The Need for Legislation in Regard to Anesthetics, and the Lines on Which It Should Take Place. FREDERICK W. HEWITT, M.V.O., M.A., M.D. (Cantab.) *The Lancet.*

In his introductory remarks he says: "The phenomenal advances which have taken place in surgery proper during the past thirty years have left the problem of safe anesthesia in the background, and it is only quite recently that a movement has been inaugurated to give this problem the prominence it deserves. Whatever means be chosen to prevent pain during a surgical operation, be it one of the greatest magnitude or one of so-called minor importance, the administrator of the anesthetic takes upon himself two responsibilities.

The first of these is towards the patient, whom he should provide with safety and comfort during what must always be an unpleasant ordeal; the second is towards the operator, whom we should provide with the best possible local conditions for the particular operation. Speaking generally, I would submit that the importance of the anesthetic as a factor in surgery is not sufficiently realized. Day after day the public mind is perturbed by announcements of deaths under anesthetics, and yet no united efforts are made to reduce the distressing mortality. I believe that had a proper share of attention been devoted to anesthetics, when modern surgery first took form, thousands of human lives would have been saved, and what is almost as important for the future progress and scope of surgery, the acute public alarm which now prevails with regard to anesthetics, and which obviously is limiting the beneficent work of our profession, would never have been established. . . . Experience has proved that the risks and discomforts of anesthetics may be reduced to trifling proportions by the recognition and adoption of proper principles of anesthetization, and that such principles may readily be acquired by the rank and file of our profession."

In England the law allows any person to administer an anesthetic for a surgical operation, provided his intentions are good and that he does his work to the best of his ability. The poorer classes necessarily suffer the most, as they employ quacks of all kinds to do this work, with the additional danger that their lives are threatened while returning to their homes, or subsequently, by alarming symptoms of cocaine poisoning, by profuse hemorrhage, or by septic poisoning. With regard to medical and dental practitioners, though the state of things is much superior, still much is left to be desired. This is more particularly the case in dental practice. Single-handed anesthetizing and operating is often used, and again often entrusted to a maid or a page-boy.

Dr. Hewitt thinks there are times when the double responsibility of anesthetizing and operating may be undertaken, but as it is the duty of the medical profession to preserve life, it is time that some steps were taken to improve the conditions under which anesthetics are administered.

The first step is the suppression of unqualified practice in anesthesia. He points out that, according to the report of the Unqualified Practice Prevention Committee of the General Medical Council, which appeared last year, there are only about 10 of 107 colonies and countries which do not protect the public against unqualified practice, and Great Britain is among this 10% minority.

In Austria special regulations have recently been issued by the Home Secretary with regard to single-handed anesthetizing and operating. The General Anesthetics Bill now under consideration of the Departmental Committee on Coroners' Law has as its main principles the restriction of general anesthesia to legally qualified medical practitioners, although it proposed to allow registered dentists to administer general anesthesia in their practice.

Dr. Hewitt deprecates this latter proposal because, he says, it encourages dentists to do single-handed anesthetizing and operating, since in most of the smaller villages and towns of Great Britain there is only one registered dentist, and usually two, three or four medical practitioners.

He also objects to the General Anesthetics Bill on the ground that it does not propose any legislative protection against local anesthetics. This omission was largely due to the difficulty experienced in drawing a hard and fast line between the comparatively harmless methods of producing localized analgesia and the more dangerous methods of securing the condition by the injection of cocaine and allied drugs. It has, however, been found possible to correct this, so that the General Anesthetics Bill has had a draft bill attached which places general anesthetics in the hands of the medical practitioner only, and local anesthetics are placed in the hands of registered medical or registered dental practitioners. S. J.

Reviews

The Autobiography of a Neurasthene. By MARGARET CLEAVES, M.D. The Gorham Press, Boston, Mass., 1910.

It is a little difficult to appreciate the object with which this book was written. The author states (p. 7): "This story is written with the definite purpose of removing, if possible, the sting and opprobrium which the essential neurasthene bears because of the long and continued pose of the neurasthene who does not exhaust neuronic energy, but poisons it by his way of living." In this purpose she singularly fails, as indeed is unavoidable, if only for the obvious reason that medical science does not recognise this distinction between two classes of "neurasthene." The life-story itself is related in a most inco-ordinate, jumbled and unintelligent fashion, and can hardly fulfil any purpose beyond affording some relief to the author's feelings. The illiteracy of the book is extreme, so that the meaning of many parts is quite incomprehensible. It is hard to believe that any physician should be so ill-educated as to be able to write a book in which every known canon of grammar, syntax and literary taste are flagrantly violated. As a representative example of the contents and style of the book one sentence may be quoted; it refers to the setting-out for a social function: "The lines of fatigue had disappeared from my face, and although as always pale, my eyes were bright, and for the benefit of the lay reader my directoire costume was stunningly elegant and very becoming." We trust the lay reader will be duly benefited and correspondingly grateful.

Now that such pathographic autobiographies are being published in increasing number, it is perhaps not out of place to make the following general observations on the subject. It is evident that the value of such publications must vary in accordance with the insight that the patient has gained in regard to the nature and origin of the morbid manifestations. Where, as in the instance before us, no evidence is given of any trace of even

rudimentary knowledge concerning the malady, the self-description has no scientific value and will do harm rather than good by being published. Then again, in thus baring themselves to the public gaze such autobiographers have to accept certain responsibilities, about which it is well that they should acquaint themselves beforehand. For example, it is probable that fewer neurasthenics would rush into print if they were aware that a considerable modern school lays great stress on the sexual basis of this disorder. Further, these self-portrayers lay themselves open to criticisms as to the correctness of the diagnosis put forward, and to discussions as to the nature and origin of the symptoms they describe. In the present case, for instance, there seems to the reviewer to be no evidence at all of the presence of neurasthenia, but, on the contrary, plain indications that the writer is suffering from hebephrenia.

It is to be hoped that the lay circulation of the volume will be small. E. J.

The Diagnosis of Smallpox. By T. F. Ricketts, M.D., B.Sc. (Lond.), M.R.C.P., D.P.H., Medical Superintendent of the Smallpox Hospitals and of the River Ambulance Service of the Metropolitan Asylums Board. Illustrated from photographs by J. B. Myles, M.B., B.C. (Cantab.), F.R.C.S. (Eng.), D.P.H., Senior Assistant Medical Officer at the Smallpox Hospitals of the Metropolitan Hospitals Board. With 12 colored plates, 110 black-and-white plates, and 14 charts. Cassell & Co., Limited: London, Paris, New York, Toronto and Melbourne.

In the general practice of medicine there is no subject which is more important to the practitioner than the diagnosis of smallpox. A mistake in its diagnosis may cause much suffering to the patient and worry to the attending physician. Any literature, therefore, which will aid the profession in acquiring a better knowledge of smallpox should be commended.

The writers of the volume before us, who have had much experience in the diagnosis of the disease, believe that illustrations

by plates should form an essential character of the work. With these one can show not only the characters of these lesions, but also their locality and distribution, which are most important data in differential diagnosis. The plates, black-and-white as well as colored, are excellent. One takes special interest in the color-plates because they are taken from negatives obtained by color-photography.

The work, taken as a whole, is praiseworthy, and we feel that if one must study the diagnosis of smallpox from books, this work should prove of great value. G. C.

American Practice of Surgery. Vol. III. Bryant and Buck. New York: Wm. Wood & Co.

Vol. III. of this system contains a discussion of poisoned wounds and injuries and diseases of bones and joints. The articles are for the most part well written, and much valuable information imparted.

While we feel that the present classification of chronic non-tubercular and non-traumatic inflammation of joints is unsatisfactory, we are not of the opinion that the writer of this section has made the matter any clearer by his method of presentation.

G. E. W.

Diseases of the Stomach. A Manual for Practitioners and Students. By S. H. Habershon, M.A., M.D., F.R.C.P. With eight colored and eleven black-and-white plates. Cassell & Co., Limited: London, New York, Toronto and Melbourne. 1909.

This book is intended as a concise description of dieases of the stomach especially from the clinical point of view.

In the first two chapters the anatomy and physiology of the stomach are considered. This part of the book is particularly well

done, the plates illustrating the anatomy and anatomical relations of the stomach being especially good.

The third and fourth chapters are devoted to nutrition and diet in health and disease, and the fifth and sixth to examination of the stomach and gastric contents. We see little which should be criticised in these sections.

The remaining portion of the work is taken up in the consideration of the symptoms of gastric disease, the causes, pathology, symptomatology and treatment of the various gastric disorders. The author includes dyspepsia in the list of gastric affections, which we think is a somewhat obsolete and unscientific method of classification. The symptoms which form the symptom-complex of the dyspepsia of the author would be better considered as manifestations of other morbid conditions, organic or functional. Again, the author, in describing the symptomatology of dyspepsia, makes use of terms vague in meaning, such as biliousness, atonic dyspepsia, acute dyspepsia, etc., which are not, as a rule, found in modern books on diseases of the stomach. G. C.

Practical Points in the Use of X-Ray and High-Frequency Currents. By Aspinwall Judd, M.D., formerly Radiologist, Post-Graduate Medical School and Hospital. Adj. Professor of Surgery of the Post-Graduate Medical School and Hospital, New York, etc. New York: Rebman Company.

The author's intention in writing this book was to present the essentials of the construction and working of X-ray and high-frequency apparatus, and their application in the treatment of disease in a concise and clear manner. The work is intended for the general practitioner who has not the time to read and master an extensive work on the subjects. The value of this book to a beginner in radiology and electro-therapy is also enhanced by the elimination of discussions on scientific questions, which are not readily followed without considerable knowledge of the science of electricity. G. C.

Examination of the Urine. A manual for students and practitioners, by G. A. DeSautos Saxe, M.D., Instructor in Genito-Urinary Surgery, New York Post-Graduate Medical School. Second edition, revised 1909. Philadelphia and London: W. B. Saunders Company. Canadian Agents. J. F. Hartz Co., Toronto.

This little book, over 400 pages, is well written and brought well up to date in the important methods of urine examination. It is written with special reference to the clinical importance of certain urinary conditions. A number of new subjects are treated, e.g., the pentases, Cammidge's reaction, methods of preserving and staining urinary sediments, etc.; also on diabetes and the toxemias of pregnancy. Altogether, this work of Dr. Saxe is to be commended very favorably to the practitioner or student who desires a ready and convenient text-book, concise and accurate. The book is nicely got up and well printed and illustrated. A valuable little book.

A. C. H.

Dominion Medical Monthly

And Ontario Medical Journal

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COMMENT FROM MONTH TO MONTH.

Gynecology in Relation to Neurasthenia. One was very much interested in the valuable contribution on neurasthenia by a Toronto physician, recently published in a local journal, to find that the doctor entertains the belief that many needless operations are performed on neurasthenic patients, and that he infers that he believes the gynecologists are the greatest offenders in this respect. Such a belief may well be called into question. Surely the doctor did not mean gynecologists, but otherwise busy men occasionally practising gynecology, if, perchance, he has any just grounds for believing as he does.

One is quite prepared to admit that, generally speaking, refinement in diagnosis of female pelvic disorders is below a desirable status, but one cannot believe that the fixers of harmless movable kidneys or displaced uteri, or the curetters of the uteri of neurasthenic patients, or removers of their tender left ovaries, are found amongst the ranks of those whose constant and serious attention is devoted to gynecology. In the course of ordinary practice it is

difficult to attain a true appreciation of the significance of various disorders without special study and experience, and if this be true in ophthalmology or otology and its allied sciences, it is equally true of gynecology, and for obvious reasons the material for study and experience in this department is not so easily obtainable as in others. Gynecological "tinkering" abounds, and is accounted for largely by the failure to make complete and satisfactory examinations in the face of difficulties which are too numerous and obvious to mention, and the lack of appreciation of the significance of the findings. It is in this way that most injustice is done to neurasthenic patients.

The dictum, "If there are no real indications for treatment, do nothing," is one that should most certainly be observed in the practice of gynecology. But there are always two sides to a story, and fewer mistakes would be made and patients would be spared injustice time and again if physicians would exercise more care in excluding contributory disorders before diagnosing neurasthenia.

F. W. M.

Father Time comes in for some consideration generally at the end of every year. At the beginning of this year, however, he has commenced early to cut a wide swath amongst the medical men of Canada.

In 1909 over 2,000 deaths amongst medical men took place in the United States and Canada. It is estimated there are in the two countries 135,000 physicians, which would give a rate of over 16 per 1,000. The average age at death was 59 years, ranging from 22 years to 100 years.

Early in the present year the deaths of Drs. Uzziel Ogden, James H. Richardson and G. S. Cleland, Toronto, and Dr. Arthur Browne, Montreal, were announced. Three of these in their day occupied prominent positions as teachers of medicine and practitioners, whilst the fourth pursued the even tenor of his medical life and died while yet young, strong and solid in the esteem of his confreres. Drs. Ogden and Richardson had for many years been identified with the teaching of medicine in Toronto, and, conse-

quently, came to be well known and well beloved by thousands of medical men, who had at least gained some of their professional equipment from them. Whilst one was quiet and unassuming in his deportment. the other was forceful and masterful. They finished their life work almost side by side, and leave behind them noble examples of professional life as it is in medicine.

The late Dr. A. A. Browne was one of the best known and respected physicians of Montreal. For several years he had been on the medical staff of McGill, but retired to devote himself to a large practice. A year ago his health failed and he died on the 26th of January, aged 63 years.

Echinococcus Disease in Canada, or more particularly in British Columbia, is a subject which has engaged the attention of Dr. R. E. McKechnie, Vancouver, B.C. The results of his enquiries and personal observations are summed up in a paper published in *Northwest Medicine*, which paper was read before the Section on Surgery at the first meeting of the Associations of the Pacific Northwest, held in Seattle last July.

Dr. McKechnie made an earnest endeavor to get statistics to cover the Dominion of Canada. Dr. J. N. E. Brown, Superintendent of the Toronto General Hospital, wrote: "During the past years (since we kept regular records) we have not had any cases of echinococcus. Two cases in fifteen years was the sum total in the Royal Victoria Hospital, Montreal—one a Russian, the other an Austrian recently arrived. Osler states the greatest frequency of the occurrence of the disease is in Iceland, and specially mentions the Icelandic settlement in Manitoba. Dr. McKechnie, however, was unable to secure any data from Winnipeg, which would have no doubt added largely to the value of the investigation. He states a former Winnipeg practitioner, Dr. Alex. Ferguson, Chicago, has published the largest personal list of cases; but we are unable to say how many occurred in his practice while in Winnipeg.

In British Columbia, Dr. McKechnie says no cases had been located outside Victoria, Vancouver and New Westminster. One case was reported by Dr. Kenny of the latter city. Victoria produced

four cases, two observed by Dr. O. M. Jones and two by Dr. Ernest Hall. Vancouver furnished seven cases, two occurring in the practice of Dr. W. B. McKechnie, three in that of Dr. A. S. Monro, one observed by Dr. B. D. Gillies, and one by the author of the paper.

Thus British Columbia has produced twelve cases in all, six males and six females. Five were from the British Isles, four from Iceland, one from Finland, one from Ontario, and the other unstated.

Dr. McKechnie stated in the discussion that since writing the paper he had received word from Winnipeg that 160 cases had occurred there, practically all in the Winnipeg General Hospital.

Ten years ago the late Dr. George A. Peters, Toronto, reported to the Toronto Clinical Society a case of hydatid cyst of the pancreas, occurring in a young man, Spanish by birth, a resident of the Argentine Republic, who came under the care of Dr. A. McKinnon, of Guelph, Ont., and upon which case Dr. Peters operated. Dr. Peters stated at that time a search of the literature on the subject revealed no other reported case of hydatid cyst of the pancreas.

Hydatids, with Analysis of Cases Treated at the Winnipeg General Hospital. This was the title of a paper contributed to the meeting of the Canadian Medical Association in Winnipeg last August by Dr. B. J. Brandson, attending surgeon out-patient department, Winnipeg General Hospital. The paper dealt with the mode of infection, development, geographical distribution and incidence in Western Canada, general symptomatology and diagnosis, treatment and analysis of cases.

When Dr. Brandson examined the records of the Winnipeg General Hospital he found there had been one hundred cases in that institution. There was an additional case found on autopsy, not suspected during life.

Of the 100 cases, 96 were born in Iceland, two came from England, one from Russia, and one from Ontario, this last case born of Icelandic parents shortly after their arrival in Ontario from Ice-

land, and which was the only case of a native-born Canadian treated in the hospital from this disease.

Although mostly found in females in Iceland, of these 100 cases 52 were males and 48 females. The youngest patient was five years and the oldest 67 years. Eighty suffered from hydatids of the liver alone.

Of the total number, seventy were cured, eight for various reasons untreated, four discharged unimproved or incurable, and eighteen died.

The Conservation of the Health and Life of the Canadian People is to form part of the great and comprehensive plan of conservation of the natural resources of Canada, as lucidly, vividly and extensively outlined in the masterly address of the Chairman of the Special Commission, Hon. Clifford Sifton, delivered a short time ago in Ottawa.

Over this particular section—the section on public health—of the National Conservation Commission, the successful financier and practical business man, Mr. E. B. Osler, M.P., has been called to preside. It may be expected that this section, therefore, of the Commission, will be productive of some good, solid and lasting results.

When, however, a statesman of the capacity of Mr. Sifton speaks out frankly to the Government of the day, and tells that Government that it concerns itself more with the health of animals than human beings, one must surely see signs of an awakening in the public and lay mind.

Try as they might for years, the medical profession, as represented through provincial and national associations, could not hope to accomplish much without bringing to their aid powerful interests, as will be represented in a Commission of this scope and character.

To those who believe and know that not much advance will be made in Canada in public health matters until such times as a properly constituted Department of Health is established, under federal authority, this section of public health, of the Conservation Commission, will be welcomed as a forerunner to that end.

That Mr. Osler and his committee will proceed to evolve a plan that will look towards a department of health for the Dominion, as well as similar departments in all the provincial governments, will, we are satisfied, be the earnest wish of all those who take cognizance of the conservation of human health and life.

The Ontario Medical Council is at the present time meeting with some rather keen and pronounced criticism at the hands of the medical press of the Province. This would seem to denote that the actions of the Council in different respects are producing some irritation, more or less vexation, and not a little unrest in the profession. The essence of the complaints lies in the fact that there is apparent irregularity in the matter of university representation. There is so much adverse criticism to both the composition and actions of the Council that were it to obtain in a somewhat similar body of men, reforms would be instituted without delay.

That a wide and sweeping amendment to the Ontario Medical Act is demanded, there can now be no reasonable doubt in any quarter. It may have fitted the conditions in the past, but the representation at the present time is entirely unsatisfactory—and this not alone in the academic and university representation.

The homeopathic practitioners of the Province are a body of fair-minded men; and we doubt very much if an amendment to the Act be contemplated, if they would demand the glaringly unfair representation of five for thirty-odd, against a regular representation of seventeen for nearly or over three thousand.

The Canada Lancet says: "There are neither too many nor too few of these classes"—the seventeen territorial and the five homeopathic representatives. We take issue with this statement, as if a rearrangement of the representation is contemplated, no such minority would either demand or expect such elaborately generous treatment.

Individually, the Medical Council is composed of as fine professional men as could well be got together. The abuses existing are not all of their making. That they may have lagged in reforming those abuses may be true; but the profession in the Province never before were so uneasy over matters pertaining to the Council. The desire for reform is now rampant, and the present Council might well take the matter up energetically, so that speedily that confidence which it ought to engender would be restored in its entirety.

News Items

DR. J. J. GUERIN has been elected Mayor of Montreal.

DR. TYERMAN, Prince Albert, Sask., is spending the winter in Toronto.

THE Manitoba Medical Association will meet on the 26th and 27th of May.

DR. HARVEY SMITH, Winnipeg, was in Toronto recently on his way to Ottawa.

DR. BRYDONE-JACK has been appointed medical officer to the Vancouver schools.

DR. L. M. CURREN has been appointed a commissioner of the St. John, N.B., Hospital.

PRINCE ALBERT, Sask., is to have a new Catholic hospital of 100 beds, at a cost of $100,000.

DR. WILLIAM TELFER, a well-known practitioner of Montreal, died recently at Burguoyne, Que., aged 46 years.

PLANS have been approved for a new wing to the Isolation Hospital, Toronto. The estimated cost of same is $102,000.

TORONTO had 7,839 births, 3,905 marriages and 5,188 deaths in 1909. The births were 106 less, and the deaths 559 more than in 1908.

DR. E. P. LACHAPELLE, Chairman of the Board of Health of the Province of Quebec, has been elected a member of the new Board of Control of Montreal.

TORONTO had no deaths from smallpox in 1909; 77 from scarlet fever; 191 from diphtheria; 70 from measles; 30 from whooping-cough; 79 from typhoid fever, and 293 from tuberculosis.

THE directors of the Royal Jubilee Hospital, Victoria, B.C., are seeking provincial government aid towards constructing a tubercular ward.

PHYSICIANS in the Canadian Northwest are now permitted to use freight trains going or coming from emergency calls on the C.P.R., without a special order.

DR. HELEN MACMURCHY, Toronto, has been appointed by the Toronto Board of Education to examine the mentally defective pupils in the public schools of the city.

THE Ontario Medical Council is asking from the Legislature power to immediately deal with members of the C.P.S.O., guilty of disgraceful conduct in a professional respect. They are also asking that a Pasteur Institute be established in the Province.

THE Canadian Medical Association meets in Toronto, June 1st, 2nd, 3rd and 4th, 1910. Dr. John B. Murphy, Chicago, will deliver the address in surgery. There is to be an excursion to Niagara Falls, and another to the Ontario Agricultural College at Guelph.

THE Verdun Protestant Hospital for the Insane, Quebec, admitted 197 patients in 1909. The total number in the institution was 783, the largest in any year yet recorded. Dr. Burgess, in his report, says a society is urgently needed to watch over patients discharged from the hospital.

THE Toronto General Hospital treated 5,104 patients in its last official year. Of 296 deaths, 118 post-mortems were held. There were 302 births in the maternity department. Registered students attended 94 externe maternity cases successfully. The cost per adult patient per day was $1.3702.

THE International American Congress of Medicine and Hygiene of 1910, in commemoration of the first centenary of the May revolution of 1810, under the patronage of His Excellency the President of the Argentine Republic, will be held May 25th in Buenos Aires, Argentine Republic. In order to facilitate the contribution of papers and exhibits from the United States, there has been appointed by the President of the Congress, Dr. Eliseo Cantôn, and the Minister of the Argentine Republic at Washington, a committee of propaganda, of which Dr. Charles H. Frazier, Philadelphia, Pa., is Chairman, and Dr. Alfred Reginald Allen, Philadelphia, Pa., is

Secretary. The Congress has been divided into nine sections, each section being represented in the United States by its chairman in this Committee of Propaganda as follows: Section 1—Biological and Fundamental Matters, Dr. W. H. Howell, Chairman, Baltimore, Md. Section 2—Medicne and Its Clinics, Dr. George Dock, Chairman, New Orleans, La. Section 3—Surgery and Its Clinics, Dr. John M. T. Finney, Chairman, Baltimore, Md. Section 4—Public Hygiene, Dr. Alexander C. Abbott, Chairman, Philadelphia, Pa. Section 5—Pharmacy and Chemistry, Dr. David L. Edsall, Chairman, Philadelphia, Pa. Section 6—Sanitary Technology, Dr. W. P. Mason, Chairman, Troy, N.Y. Section 7—Veterinary Police, Dr Samuel H. Gilliland, Chairman, Marietta, Pa. Section 8—Dental Pathology, Dr. George V. I. Brown, Chairman, Milwaukee, Wis. Section 9—Exhibition of Hygiene, Dr. Alexander C. Abbott, Chairman, Philadelphia, Pa. It will not be necessary for one contributing a paper or exhibit to the Congress to be present in person. Arrangements will be made to have contributions suitably presented in the absence of the author. The official languages of the Congress will be Spanish and English. Members of the following professions are eligible to present papers or exhibits: Medicine, Pharmacy, Chemistry, Dentistry, Veterinary Medicine, Engineering and Architecture. Papers may be sent direct to the chairman of the particular section for which they are intended, or to Dr. Alfred Reginald Allen, Secretary, 111 South 21st Street, Philadelphia, Pa.

Dr. H. S. Baketel, for many years advertising manager for the Denver Chemical Co. (antiphlogistine), New York, has severed his connection with that firm, and has assumed the Vice-Presidency and General Managership of the Thermo-Chemicals Company, New York, which company is marketing in the United States and Canada "Hyperthermine," which promises to be of undoubted therapeutic value.

Correspondence.

REFORMING POLICE COURT INEBRIATES.

The Editor of THE DOMINION MEDICAL JOURNAL:

Dear Sir,—The Society for the Reformation of Inebriates aims at two things:

1st. For some years, in a quiet way, it has been trying to reclaim the unfortunates charged in the Police Court with drunkenness. Daily at the City Hall the Society has in attendance a physician and two other officers, who go among these prisoners and try to reach those ready to be aided by the Society.

The drink habit is accompanied by a diseased nervous system, and what many of these people need is medical treatment. The physician in attendance gives this to those found willing to accept it, and in some cases the Society bears the expense of keeping in hospital, for a time, inebriates who must receive such treatment if they are to have any chance in life. The results from such methods have been most encouraging.

2nd. The second great aim of the Society is to reform completely the present mode of dealing with inebriates committed to jail. Toronto needs badly what a good many cities both in Great Britain and the United States now have—a farm outside the city, to which inebriates charged with drunkenness can be sent to be kept at wholesome labor, if possible out of doors, for a time long enough —a good many months in some cases, no doubt—to permit their whole system to get into healthy condition. To send such persons repeatedly for short terms to jail is to give them no real chance. They should be treated as diseased persons and kept long enough to become healthy in mind and body.

It is obvious that the Society has an extensive work on hand. It has further aims, among others the securing of a hospital where inebriety may be treated under favorable conditions: existing hos-

pitals make but slight provision for such a class of patients. But the two aims outlined above are the chief ones before the Society for the moment.

To carry on its work, it requires funds, and your readers are urged to aid efforts that, if pressed forward, will bring new hope and self-respect to many lives. Any sums will be welcomed. If only one dollar can be sent, it will be gladly received. It is hoped that some donors, able to do so, will aid this hard-pressed work generously.

Contributions may be sent to the Treasurer, Hon. S. C. Biggs, Confederation Life Building; the Secretary, Dr. A. M. Rosebrugh, Relief Office, City Hall, or to my address, 467 Jarvis St.

Yours truly,

GEORGE M. WRONG,
President.

Toronto, January 10, 1910.

Publishers' Department

ADRENALIN IN A NEW PACKAGE.—In addition to the ounce vials in which it has hitherto been supplied, Adrenalin Chloride Solution is now being marketed in hermetically sealed glass containers of 1 cubic centimeter capacity. "Adrenalin Ampoule" is the name used to designate the new package, and the solution is of the strength of 1 to 10,000 (one part Adrenalin Chloride to 10,000 parts physiologic salt solution). In their announcement of the Ampoule, Parke, Davis & Co. have this to say:

"Adrenalin Chloride Solution has become a necessity in medical and surgical practice. The most powerful of astringents and hemostatics, it lends itself to many practical uses, and at little risk of injury in reasonably careful hands. Since the time of its introduction it has been marketed in ounce vials, and of the strength of 1:1000. Experience has shown, however, that a weaker solution is much more frequently required than the "full strength," and, while it is generally an easy matter to dilute with water or normal saline solution, in certain emergencies an already fully diluted preparation is to be preferred. While the danger of deterioration from occasionally opening a vial containing a solution of Adrenalin Chloride is not great, still, in consideration of the fact that a dose is needed now and then for hypodermatic injection, it is believed that the small, hermetically sealed package will be welcome because of its greater convenience and security."

As will be apparent from the foregoing, the Adrenalin Ampoule is intended for hypodermatic use. It should be of great value in such emergencies as shock, collapse, hemorrhage, asthma, etc., or where prompt heart-stimulation is desired.

VALUABLE CONCLUSIONS.—The case of G. H. is reported by J. S. Norwell, M.B., C.M., B.Sc., of Edinburgh, Scotland, as follows: "Suffered from headaches which proceeded from errors in diet. I arranged a table of diet for him which proved beneficial. I prescribed antikamnia tablets, and with the very best results. His headaches were kept under until his changed dietary had time to effect more permanent relief. This year he went to Bisley. In case he should be troubled there with his *bete noir*, I gave him some anti-

kamnia tablets as a stand-by. On his return he told me he had no headache, but that he had used all the tablets. Headaches, it seems, are no uncommon accompaniments of camp life. He has dispensed the antikamnia tablets to some of his suffering companions, and they (the tablets) 'hit the bull's eye every time.' Who knows but that they had something to do with the phenomenal scoring at the last meeting!"

One could multiply similar cases, but this may suffice to illustrate the effects of antikamnia tablets in the treatment of headaches, and to warrant the following conclusions I have come to with regard to their use: (*a*) They are a specific for almost any kind of headache. (*b*) They act with startling rapidity. (*c*) The dosage is small. (*d*) The unpleasant after-effects so commonly attendant on the use of many of the other analgesics are entirely absent. (*e*) They can therefore be safely put into the hands of patients for use without personal supervision. Another point worth noting is that they can be very easily taken, being practically tasteless.

It is contrary to my custom to write testimonials, but the results I have obtained from the use of Resinol Ointment and Soap are so extraordinarily satisfactory that I think it is my duty to say a good word for these products. With the Ointment, I have been able to cure a case of eczema of over twenty years' standing, which had baffled all previous treatment. At present I have a case of an aggravated ulcer on the leg, and it is being healed up rapidly with Resinol. It is now over two years since I have first started to use Resinol Ointment. I am greatly pleased to say that it has never failed to do excellent work. I take this opportunity to thank you for the samples sent me from time to time, and also for bringing Resinol to my attention.—Dr. Eduardo Toledo y Toledo, Madrid, Spain.

THE FORGIVING DRUGGIST.—About a thousand years ago, approximately, I was apprenticed as a printer's devil to learn the trade, in common with three other boys about my own age. There came to the village a long-legged individual of about nineteen, from one of the interior counties; fish-eyed, no expression, and without the suggestion of a smile—couldn't have smiled for a salary. We took him for a fool, and thought we would try and scare him to death.

We went to the village druggist and borrowed a skeleton. The skeleton didn't belong to the druggist, but he had imported it for the village doctor, because the doctor thought he would send away for it, having some delicacy about using—well, the price of the skeleton at that time was fifty dollars. I don't know how high they go now, but probably much higher, on account of the tariff.

We borrowed this skeleton about 9 o'clock at night, and we got this man—Nicodemus Dodge was his name—we got him down town out of the way, and then we put the skeleton into his bed. He lived in a little one-storeyed log cabin in the middle of a vacant lot. We left him to get home by himself. We enjoyed the result in the light of anticipation; but by-and-by we began to drop into silence; the possible consequences began to prey upon us. Suppose that it frightens him into madness, overturns his reason, and sends him screeching through the streets! We shall spend sleepless nights the rest of our days. Everybody was afraid.

By-and-by it was forced to the lips of one of us that we had better go at once and see what was happening. Loaded down with crime, we approached that hut and peeped through the window. That long-legged critter was sitting on his bed, with a hunk of gingerbread in his hand, and between the bites he played a tune on a jew's harp. There he sat, perfectly happy, and all around him on the bed were toys and jimcracks and striped candy. The darned cuss has gone and sold the skeleton for five dollars. The druggist's fifty-dollar skeleton had gone.

We went in tears to that druggist and explained the matter. We couldn't have raised fifty dollars in two hundred and fifty years. We were getting board and clothing for the first year, clothing and board for the second year, and both of them for the third year. But the druggist forgave us on the spot, but he said he would like us to let him have our skeletons when we were done with them. There couldn't be anything fairer than that; we spouted our skeletons and went away comfortable. But from that time the druggist's prosperity ceased. That was one of the most unfortunate speculations he ever went into.

After some years one of the boys went and got drowned; that was one skeleton gone, and I tell you the druggist felt pretty bad about it. A few years after that another of the boys went up in a balloon. He was to get five dollars an hour for it. When he gets back there will be owing him a billion dollars. The druggist's property was decreasing right along. After a few more years the third boy tried an experiment to see if a dynamite charge would go off. It went, all right. They found some of him—perhaps a

vest pocket full; still it was enough to show that some more of that estate was gone. The druggist was getting along in years, and he commenced to correspond with me. I have been the best correspondent he has. He is the sweetest-natured man I ever saw; always mild and polite, and never wants to hurry me at all. I get a letter from him every now and then, and he never refers to my form as a skeleton; he says:

"Well, how is it getting along—is it in good repair?"

I got a nice message from him recently—said he was getting old and the property was depreciating in value; if I could let him have a part of it now he would give time on the balance. Think of the graceful way in which he does everything—the generosity of it all. You cannot find a finer character than that. It is the gracious characteristic of all druggists.—Mark Twain.

The Fees of Our Ancestors.—Under the above title, D'Arcy Power has recently contributed to Janus an interesting little paper on the emoluments of physicians at various periods. With the art of a practised writer, he at once arrests his reader's attention by reminding him of two physicians whose custom it was never to receive a fee at all—namely, the "unmercenary" saints, Cosmas and Damian. At the opposite extreme comes the fee which Mr. Power has omitted to recall—namely, that received by Democedes, of Crotona, who as a prisoner was in the service of Darius Hystaspes at Susa. Darius had dislocated his foot at the ankle-joint, and Democedes was called in after the failure of an Egyptian surgeon. His treatment was successful, and he was thereupon presented with two golden fetters, a delicate allusion to his position. Having delighted Darius by asking him "whether he meant to double his punishment," that monarch told him to go through the harem as the man who had saved the king's life. The ladies each gave him a golden vessel piled up with *staters*, so many of which fell on the floor that the slave who conducted him made a handsome fortune by picking them up. He was afterwards called

in to treat Atossa, the Queen, for a mammary ulcer, which he succeeded in curing. Such patients, however, as the Great King and his consort do not fall to every man's lot, though in quite modern times the high feudatory princes of India have paid comparable fees.

In the Middle Ages men were more mercenary, and Mr. Power gives an amusing quotation from John of Arderne (*circa*, 1370) as to the methods of bargaining with a patient. Arderne's highest fee for the cure of fistula in ano was £40 down, a suit of robes, and 100*s.* per annum during the life of the patient. Patients in the Middle Ages were no more ready to pay their fees than now, and Gilles de Corbeil, a celebrated twelfth century physician, points out in language which most surely would strike an answering chord in the heart of the present Chancellor of the Exchequer, that the rich man must pay in accordance with his wealth, though he adds, as a saving clause, "if his mind is as wide as his purse" then—

> "Aggravet hic medicina manum; sumptus onerosos
> Exigat: hic positos debet transcendere fines."

In another place he remarks that it is as well for the physician to demand his fee before the patient is well—

> "Tutius esse reor, quod certe novimus omnes,
> Dum dolet accipere, vel munere posse carere."

Mr. Power concludes his paper with an account of eighteenth century fees. Physicians like Radcliffe and Mead charged a guinea; country apothecaries charged much less and made their money chiefly by the sale of medicine. Mixtures, as Mr. Power reminds us, were sent out as draughts in one-ounce phials, with a cork which sometimes had one pill in a box stuck on to it. Draught and pill cost 1s. 9d. As many of our readers will remember, the directions were written on a slip of paper attached to the neck of the bottle, and such a draught, in the half-light of a sick-room, bore a ludicrous resemblance to the human inhabitants of a Noah's Ark, as manufactured in about 1860, up to which time the custom of separate draughts endured. Readers of Swift will remember the story he tells of Stella: "A Quaker apothecary sent her a vial, corked; it had a broad brim and a label of paper about its neck. 'What is that,' said she, 'my apothecary's son?' "—*Lancet.*

ANIMAL EXPERIMENTATION AND TUBERCULOSIS.—E. L. Trudeau, Saranac Lake, N.Y. (*Journal A. M. A.*, January 1), shows how all our knowledge of everything bearing on the control and prevention

of tuberculosis is due to experiments on the lower animals. All the advances previously made, before the infectious nature of the disease had been proved, were limited to pathologic anatomy. He gives a history of the early progress in the direction of experimental studies, showing how, through the early work of Klencke, Willemin, Klebs, and others, the infectious nature of tuberculosis was demonstrated, but it was not until the epoch-making work of Koch, in 1882, on the etiology of the disease, that it was generally accepted by the profession and the public. His later work, in 1890, demonstrating the value of tuberculin in diagnosis, which has been of inestimable utility in the control of the disease and also in its treatment, is all due to experiments on animals. Far-reaching as the new knowledge of tuberculosis is in the saving of life, it is not entirely easy to estimate it, as so many factors are involved. The death rate has fallen notably during the last forty years, in some countries only slightly faster since the discovery of the tubercle bacillus; but in others the diminution has been most remarkable since 1882. In New York City there has been a reduction of 40 per cent. in the deaths from consumption; in Prussia, fully 50 per cent. The results, however, depend largely on the thoroughness and efficiency with which the preventive measures are carried out. The experience of the past has justified the hope that ultimate control of the disease will finally be attained by knowledge acquired by the same means, and will probably depend not only on more thorough and comprehensive application of the facts already learned, which are the basis of all preventive measures so far, but also on the discovery of some specific method of immunization or treatment, which can only be brought about by continued and painstaking studies on animals. It has taught us already much as to the different types of the tubercle bacillus and their virulence, and the many ways in which this micro-organism invades the human system and destroys it. In his experience, animal experimentation has directly aided his practice and shown him that the production of artificial immunity is not altogether so unattainable as was formerly supposed. Those who, through ignorance or false sentiment, are working to have legal prohibition of this most valuable method of study for the prevention of disease, have little realization of or care for the amount of human suffering that exists, and are apparently willing that it should continue indefinitely so long as it does not affect themselves, or they do not come in contact with it.