The Canadian Journal of Medicine and Surgery

A JOURNAL PUBLISHED MONTHLY IN THE INTEREST OF MEDICINE AND SURGERY

VOL. XIV. TORONTO, AUGUST, 1903. NO. 2.

Original Contributions.

THE TREATMENT OF CHRONIC EMPYEMA.*

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THE treatment of chronic empyema is a subject of sufficient importance to bring before this Association. The remarks I have to make on the subject are based upon my own experience, and chiefly upon thirty cases the records of whose clinical history I have preserved. Fifty per cent. of these cases were under ten years of age. It would appear that an empyema is more common on the left side than on the right. Of twenty-six of my cases I find that sixteen were on the left side, nine were on the right, and one was a case of double empyema. In other published statistics this appears to hold true. Statistics, too, would go to show that empyema of the left side is more fatal than of the right. Of my fatal cases 33 per cent. were on the right side, and 67 per cent. on the left. This has been ascribed by some authors to the proximity and intimate relations of the heart to the left pleura, as compared with the conditions obtaining on the right side. I may make the further observation and state that of my cases of empyema, which developed a chronic course, 86 per cent. were on the left side, and 14 per cent. on the right, apparently suggesting the greater likelihood of an empyema developing a chronic course when it exists on the left side.

The object of my paper is to deal with the treatment of these cases of chronic empyema. Occasionally an empyema will persist and run a chronic course, remaining unopened for a long period. This, I believe, is possible in certain cases of pure pneumococcus infection. Thus a child five

*Read before the Ontario Medical Association, June, 1903.

years of age was admitted under my care in the Children's Hospital in August, 1901. The history was that of chest trouble two years before, from which he recovered; then six months before admission he began to suffer from shortness of breath, and his general health failed; when he presented himself in my consulting-room before admission to hospital, I found his right pleural cavity completely filled with fluid. After resection the bacteriologist reported that he could not get any culture to grow, but in the pus he found some misshapen pneumococci which he believed to be dead. The pus was, therefore, sterile at the time of operation. In the majority of instances, however, when an empyema of pure pneumococcic infection is properly treated the case runs a favorable course and progresses rapidly to a cure. Even under most adverse conditions, if efficient precautions are taken to avoid mixed infection, one may secure a speedy convalescence, as indicated in such a case as the following:

J. M., aged 23. Was operated upon, December 22nd, 1901. He had been extremely ill with pneumonia, and it was thought could not recover. A week previous to operation I had opened an abscess in the right arm. Aspiration was performed immediately below the angle of the scapula on the right side, and pus was found on directing the point of the needle inwards towards the spine. Here Dr. J. D. Thorburn had diagnosed a localized empyema. The ninth rib was resected for 1½ inches, and a drainage tube placed in position. The cavity was markedly localized, and was apparently chiefly in the space bounded by the mediastinal pleura. The bacteriologist found a pure culture of the pneumococcus. The discharge rapidly diminished, and the tube was removed on the fourteenth day, and the wound healed. The man is now living in California, and is in excellent health. He was heard from recently as pitching in a baseball team.

Undoubtedly, the most of our cases which run a chronic course are those where mixed infection has occurred, or where the empyema to start with has been due to some infection other than the pneumococcus. Mixed infection may occur at the time of operation, and, therefore, our technique must be most carefully carried out in order to prevent, if possible, such an untoward event when we proceed to resect for empyema. It is worthy of note here that an empyema may burrow and point beneath the skin, and still remain of pure pneumococcic character. The following illustrates such a condition:

O. S., aged 7. Admitted January 15th, 1903. Above and internal to the right nipple was a fluctuating swelling about two inches in diameter. Apex beat was in the sixth interspace four inches from the middle line. I resected the sixth rib below and external to the right nipple. The swelling in the anterior aspect of the chest now disappeared on pressure, and subsequently on

manipulation became emphysematous. The culture showed a pure pneumococcus. Free drainage was maintained. Within a month the wound was quite healed and the child went home cured.

With mixed infection, however, you sooner or later have to deal with sinuses discharging on the surface, or opening into the lung, or with communications in both directions. Such are the conditions which obtain, provided the patient survives, and the empyema becomes "chronic." Something must be done if we are to save life, and the condition is a desperate one. Let me remind you of the fact that the loss of a drainage tube in the empyema cavity is a possibility which we must by no means lose sight of, and my experience teaches that one should always hunt an empyema cavity for such a foreign body when called upon to operate for a persistent sinus. The first time I was impressed with the importance of this was a good many years ago when I, as house surgeon, assisted Mr. Pierce Gould to operate on an old empyema, and on exploring with his finger he drew out no less than ten inches of drainage tube from the pleural cavity, twisted and much altered in appearance as the result of its long sojourn in the pus cavity. I also had a similar experience in one of my cases, which was as follows:

G. M., aged 2. Operated on, November 13th, 1894. History of pus having been aspirated ten days before, and now a reaccumulation, I excised 1½ inches of the sixth rib in the mid-axillary line, and removed a large amount of stinking pus. The cavity was somewhat slow in closing, but eventually the child was discharged apparently cured. Twelve months subsequently he contracted pneumonia, and empyema recurred. The mother would not consent to his coming to hospital, and accordingly the physician in attendance opened the chest in the region of the old cicatrix, and the wound was attended to by a district nurse. A sinus persisted, however, and would not close, and he was readmitted under my care in the Children's Hospital. I excised about 1½ inches of the fifth, sixth and seventh ribs, and then proceeded to explore the cavity. I found to my surprise three inches of drainage tube lying free in the chest cavity. Evidently this had been lost during the drainage of the cavity, and had not been missed. It undoubtedly was responsible now for keeping up the discharge. The child made a rapid recovery and has remained well.

The clinical picture of the typical case of chronic empyema with all the sequelæ of long-continued suppuration is too familiar for me to dwell upon. As I have already stated the condition is desperate, and demands desperate measures. Schede, of Hamburg, has taught us what, I believe, holds out the only hope of recovery in many of these cases. Where the lung has retracted and there is no hope of expansion, and nature has met the case as far as possible by flattening of the chest and elevation of the diaphragm, and yet the cavity remains patent, then Schede proposes the

operation of "thorax resection," by which he means removal of the unyielding part of the outer wall of the cavity so that it may collapse and meet the pulmonary surface, and thus bring about obliteration of the cavity. It is an operation of the utmost severity, with a very high mortality, but one should not hesitate to undertake it when the case is otherwise hopeless. Neither of the two cases which I record made a permanent recovery, but the course they ran has convinced me that in certain cases permanent recovery is possible. In the presence of tubercular phthisis, however, when that is known to exist beyond doubt I think it is useless to undertake the operation. My cases were as follows:

M. L., aged 23, female, was admitted into hospital in January, 1891. She had had typhoid fever six months previously. This was followed by pneumonia, and then empyema developed. The chest was aspirated twice, and she apparently got well and left hospital, but eighteen months afterwards she was readmitted, when an incision was made behind the left shoulder blade, and the chest drained. As the cavity did not drain freely, resection of the rib was performed after the lapse of a month. She improved after this and left the hospital, but in May, 1896, she was admitted to the Toronto General Hospital with a discharging sinus, and was there once more operated upon; she remained in hospital nine months and then went out with, however, the sinus persisting. She applied for admission to St. Michael's Hospital in September, 1897. She was in a miserable condition, ill-nourished and emaciated, the sinus draining badly and the discharge fetid. An extensive operation was suggested as the only prospect of relief, but the fact that the right lung presented evidence of trouble (probably tuberculous) at the apex made one hesitate before undertaking such a serious operation on the left side. The patient was anxious to be afforded the small chance which operation held out, and accordingly on November 30th, 1898, I removed a large portion of the chest wall, including the thickened pleura. After dissecting off the superficial soft parts I used a large bone forceps, curved and provided with a spring so that I was able rapidly and easily to remove the ribs and pleura in one piece over an area corresponding to the outer wall of the empyema cavity. The wound was packed with iodoform gauze.

The patient rallied well after the operation, but the trouble at the apex of the right lung made rapid progress; she became extremely emaciated, and she died thirty-two days subsequently.

The second case referred to had the following history:

E. M., aged 30. Admitted September 14th, 1896. She had two sinus openings in the left chest, and some cicatricial tissue between, indicating where previous operations of resection had been performed. She had suffered for a prolonged period from con-

tinued suppuration, and she was in an ill-nourished, emaciated condition. A vertical incision six inches long was made in the mid-axillary line and the cavity explored through the sinus openings. One judged that it was about the size of the clenched fist. The third rib appeared to be the uppermost limit of the cavity, and this was accordingly bared and 4½ inches of it removed; then five inches of the fourth rib. The fifth, sixth and seventh ribs had been resected at a previous operation, and now 2½ inches further were removed from each; then from the eighth rib three inches, and from the ninth two inches were removed. In all, some twenty-one inches of rib were removed. The patient's condition at this stage of the operation was so bad that excision of the thickened pleura could not be undertaken. Two large drainage tubes were placed in position, and the wound otherwise closed. The patient rallied well after the operation, but she died some months after of phthisis. The wound had not completely healed, but had contracted greatly, and there was little or no discharge.

Although neither of these cases resulted in a permanent cure, there can be no doubt but that they were subjected to a trial of the only procedure which held out any prospect of relief in an otherwise hopeless condition.

I believe a word of caution should be uttered here as one might be tempted too hastily to look upon a case as hopeless without having tried the simple device of establishng *absolutely free* drainage. A small opening will not suffice. The drainage tube or tubes must be of large size, and the drainage absolutely unobstructed. The best way to enforce my point is to narrate a case, and I think you will agree with me that at first sight a Schede operation seemed the only hope, and yet I cured my patient by drainage.

F. C., aged 23. Admitted October, 1893. Three years previously he had an attack of pneumonia of the left side, which was followed by empyema. The pus cavity was tapped six times, and on one of these occasions the cannula was left in for drainage. A sinus persisted subsequently which kept discharging pus. This sinus closed spontaneously in August, 1892, and remained closed for six months; it then opened up again and continued to discharge up to the time of operation. His condition before operation was indeed miserable. He had become extremely emaciated, and presented a most cadaverous appearance. He suffered from night sweats, and had a distressing cough. A large amount of pus came constantly from the sinus opening when he walked about or remained upright; but when he lay down the cough became troublesome, and he expectorated quantities of purulent material whilst the sinus, under these conditions of recumbency, discharged but little. The finger tips were clubbed to a remarkable degree; he suffered from edema of the feet, and he presented all the appear-

ance of a man in an advanced stage of pulmonary phthisis. Obviously the man suffered from an empyema of long standing, and a large communication existed with the lung or bronchus. The pus cavity was discharging in two directions; chiefly by the sinus on the surface of the chest when he stood upright, and chiefly into the lung and air passages when he lay down. Through a vertical incision some two inches of the sixth and seventh ribs were incised in the anterior axillary line. A free flow of pus resulted, and on exploring with the finger a very large cavity was found. The thickened parietal pleura (fully three-quarters of an inch thick), and the periosteum in the region of the resection were carefully cut away. The operation was by no means devoid of danger, as the recumbent position, plus the insensibility produced by the chloroform, permitted the pus to accumulate in the air passages, and the patient became almost asphyxiated. The cavity was washed out with 1 in 20,000 bichloride of mercury, and a vulcanite tracheotomy tube secured in position for drainage. The patient made a remarkable recovery after the operation. He gained rapidly in weight so that as a matter of actual observation he gained twenty-one pounds in twenty-one days. In March, 1894, five months after operation, he entered the Street Railway employ as a motorman, and continued at that occupation in apparently excellent health for some months. I saw him at his work towards the end of June, 1894, and he was then strong and well, but shortly after this he was unfortunate enough to contract pneumonia on the right side of the chest, and to this he rapidly succumbed. Dr. Fotheringham, who was present at the *post-mortem,* informed me that the left pleural cavity where the empyema had existed had become completely obliterated.

The point is also illustrated by the following case where a chronic course threatened, but was prevented by the establishment of efficient drainage:

G. S., aged 3½. Operation was performed, June 29th, 1894. The child had been ill two months before admission. One month previously a surgeon had incised below and to the left of the left nipple, and inserted a drainage tube. The tube came out after a few days, and the drainage was not efficiently maintained. On admission a fistulous opening was discharging a scanty amount of foul-smelling pus. I resected 1½ inches of the fifth rib, and a large quantity of stinking pus escaped. The cavity was flushed with sterilized water, and a vulcanite tracheotomy tube placed in position for drainage. The child made a rapid recovery.

Robert McGuire in a "Discussion on the Treatment of Pleuritic Effusion in Childhood," at the British Medical Association, in 1899, expressed the view that pneumothorax with or without effusion may well be left alone if its tension be not very high. "Pus," he adds, "in the body is bad, but in the condition to which

I refer, I think the operation for its removal is worse." We think the statement is too general. Pyo-pneumo-thorax is the worse complication we can meet with here. Some of these cases, however, do recover, and recover, too, without operation. Occasionally we see a man dying who may possibly be saved by operation. I refer to those cases where there is a free communication with the lung or bronchus, and where abundant, foul-smelling, purulent material finds its way into the air passages, and is expectorated. When with these conditions you find your patient steadily losing ground, surely the rational line of treatment is to resect a portion of one or two ribs, and establish free drainage. The following case comes under that category, and further illustrates the interesting complication of hemiplegia and aphasia with empyema:

L. C., aged 24, a news-carrier. Admitted under Dr. Dwyer's care in St. Michael's Hospital on February 7th, 1903, with empyema affecting the left side. He had consulted a doctor seven years previously for pleurisy; his mother had died of consumption. When he came to hospital his temperature was normal; respirations 28, and pulse 78; he was then a thin poorly-nourished man; he had a slightly cyanosed color and distressed facies. The left chest presented the physical signs of a large collection of fluid in the pleural cavity, with the cardiac dulness displaced to the right nipple line. On aspirating in the sixth interspace thirty ounces of pus were withdrawn. In addition to the empyema this patient presented the unusual condition which in rare instances has been found associated with empyema, namely hemiplegia with aphasia. The right side was partially paralyzed; there was marked weakness in the right arm and leg; complete paralysis at the wrist, and very slight movement possible of the fingers; the tongue was protruded to the right side, and the right side of the face was smoother than the left; he spoke slowly and with difficulty. The condition of hemiplegia and aphasia varied very much during the four months since his admission to the hospital, but the symptoms still persist. This condition has been ascribed to softening, brought about by embolism of the middle cerebral artery. It is suggested that in consequence of displacement of the heart and the resulting interference with circulation a thrombus has formed in the heart or pulmonary veins, and from this the embolus has had its origin.* Another explanation advanced is metastatic encephalitis, which has not gone on to suppuration.

The dislodgment of a portion of a thrombus may result from the disturbance of parts which must necessarily accompany the sudden removal of a large quantity of fluid, and it has been suggested that hemiplegia occurring after paracentesis has thus been accounted for. Two days after aspiration, examination of the chest showed signs of extensive pneumothorax on the affected side; the metallic tinkle,

*Samuel Gee, "Pleurisy," "Clifford Allbutt's System of Medicine," vol. 5, p. 364.

tympany and loss of resistance with suppression of breath sounds indicated the diagnosis. The fluid did not reaccumulate rapidly at first, but two weeks after aspiration there existed a considerable quantity in the cavity. The total number of aspirations previous to my operation are indicated in the subjoined table:

February 7th (on admission)	30	ounces
" 25th	50	"
March 15th	80	"
" 25th	70	"
April 9th	35	"
" 11th	50	"
" 18th	12	"

The patient had a most irritating spasmodic cough with a small amount of expectoration suspiciously like that removed in aspiration. Just previous to the last aspiration the amount of purulent expectoration had greatly increased and was very foul-smelling; moreover the pus at the last time of withdrawal was so thick that it would not flow freely through the needle, and the cavity was not completely emptied. There was now some elevation of temperature, rising as high as 103 deg. F. at night, but he had had no chill nor sweating. On April 25th (seventy-seven days after admission) I resected 1½ inches of the eighth rib in the posterior axillary line, and removed a large quantity of pus; this possessed the foulest stench it is possible to imagine, and contained much flaky material. I placed two large drainage tubes in position, and applied a dressing.

Since the operation, seven weeks have elapsed, and the patient has made marked progress. He has put on flesh, and his general condition has in every way improved. There is still some hemiplegia and difficulty in talking, but there appears to be a certain amount of mitigation of these symptoms; certainly the aphasia is not so pronounced.

Obviously in this case free drainage has already accomplished much. The operation would have been performed earlier, but the general condition of the patient was such that it was not thought wise to attempt it; moreover, the long intervals at first existing between the periods of aspiration, with slow reaccumulation of fluid, gave rise to the hope that something might be accomplished by aspiration alone.

Dr. Dwyer has under his care at present a patient with pyopneumo-thorax, running a favorable course after simple aspiration. The history is as follows:

B. E. W., aged 20. Admitted to St. Michael's Hospital under Dr. Dwyer's care during the latter part of May, 1903. She has been in poor health since last autumn when she had pneumonia of the left side. She presented the local signs of fluid in the left pleural cavity, and on aspirating a large quantity was drawn off.

Three weeks after aspiration there had been very little reaccumulation. There is, however, the characteristic metallic tinkle obtained in pyo-pneumo-thorax.

It is interesting to observe that an abscess may cross the pleural cavity and rupture into the lung or bronchus, giving rise to copious expectoration of fetid pus, without invading the pleural cavity generally. The following is the history of a patient who suffered from a subphrenic abscess which ran the course indicated:

G., aged 20. Admitted July 30th, 1899, with a history of having become ill twelve days previously. He had always been strong and healthy. He now suffered severe pain in the abdomen, and appendicitis was suspected. Forty-eight hours after admission he was seen by Dr. McPhedran, who diagnosed pus in the right lumbar region, and advised operation; immediately previous to this he had had a severe chill, and his temperature rose to 106. Shortly after Dr McPhedran's visit, and two hours before operation, he was seized with an irritative, distressing and incessant cough, and brought up from time to time small quantities of stinking pus. There was no dulness over either lung, and other local signs caused one to conclude that a subphrenic abscess had ruptured into the lung. Under chloroform the cough ceased, but the cyanosis became extreme. An opening was rapidly made anteriorly below the ribs on the right side, and a pus cavity at once reached. The abscess lay above the liver, that organ being depressed downwards. I passed my fingers back in the cavity and opened the loin for a counter opening, and inserted drainage tubes. The cough returned slightly after operation, but soon disappeared. For the first few hours after operation he improved, but sixteen hours after operation he became suddenly worse and died. Unfortunately we were unable to obtain a *post-mortem* examination.

The following case illustrates a condition of pyo-pneumothorax communicating with an abscess pointing on the anterior surface of the chest. As this was only one manifestation of a general pyemia, operation offered little hope of success.

Mr. M., aged 56. Admitted March 13th, 1901, said to be suffering from pyemia. Five months previously he was treated for bronchitis, and shortly after his physician told him the left lung was consolidated. On admission he had an abscess in the calf of the left leg, suppurative keratitis of the right eye, and an abscess on the right shoulder. He also had a circumscribed swelling over the cartilages of the third and fourth ribs. This presented some emphysematous crackling on manipulation, and the patient was able to make it more prominent when he attempted a forced expiration with the mouth and nostrils closed. Dr. McPhedran, who saw the patient with me, agreed that there was a localized empyema cavity, which communicated on the one hand

with the lung, and on the other with the swelling on the anterior chest wall. The superficial abscess was opened and packed with gauze. A more extensive operation was in contemplation to open up the cavity within the chest, when the patient died suddenly and unexpectedly. A *post-mortem* examination was not permitted, but obviously he suffered from a pyo-pneumo-thorax, the abscess pointing on the surface of the chest.

Kurpjuweit has recently recommended a method still more extensive than Schede's in the treatment of chronic empyema. In addition to excision of the costal pleura he suggests and practises decortication of the lung; stripping off the pulmonary pleura from its surface, and subsequently suturing the denuded lung to the chest wall in the region of the resection.*

In concluding my paper let me emphasize the importance of my contention, borne out, I think, by the cases which I have recorded, namely, that cases of chronic empyema should be operated on with a view of establishing the most efficient drainage possible. I do not believe that much is to be gained by irrigation, and there is apparently some danger in the procedure. Many cases will be carried to a successful issue if free drainage is maintained. Finally, let me urge the advice that whenever pus is discovered in the pleural cavity it should be got rid of by free drainage at an early stage of the trouble, and if this is accomplished much of the misery which is experienced as the result of the disease becoming chronic will be prevented. In this connection, G. F. Still's statistics are worth study. He finds that in twenty-eight consecutive cases of death from empyema ten had shown suppurative pericarditis; five, suppurative peritonitis, and one suppurating joints.† In all these cases the empyema appeared to be the primary infection. Arguing from the analogy we have in other infective processes which tend to become more generalized throughout the system, and from the results we know obtain in such cases, after removal of the primary focus of infection, we conclude that the rational treatment of an empyema at its inception, as well as in its chronic stage, is to establish free drainage. Where free drainage has had a fair trial in chronic empyema, and a cure is not thereby effected, Schede's operation of thorax resection should be undertaken if the general condition of the patient warrants it.

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* *Centralblatt fur Chirurgie*, 1902, p. 801: "Uber die Decortication der Lunge bei chronischem Empyem."

† *British Medical Journal*, 1899, vol. 2, p. 455.

A CASE OF TUBERCULAR LARYNGEAL STENOSIS TREATED BY TRACHEOTOMY.*

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

LARYNGEAL tuberculosis as a sequence to pulmonary tuberculosis is of such common occurrence that I would not have taken the liberty to present the report of a case to the Fellows of this Society but for its unusual history and the remarkable condition of the patient at the present time.

On April 2nd, 1901, Mr. T. D., piano-builder, aged 30, was referred to me by Dr. Thomas Kerr, of Toronto. He had been under treatment for two or three years for dry cough, and for several months his throat had been sore, resulting in odynphagia and dysphagia. There was also dyspnea on lying down, and constant partial aphonia. For some time he had been subject to night-sweats. Appetite was gone. Pulse, on examination, was 120; respiration, 24; temperature, 99 3-5; weight, 117 pounds. There was frequent, almost noiseless cough, racking the body, but attended by little solid expectoration. There was chest soreness, but no pain. Whether it was due to the lack of solidity in the sputum or not, microscopical examination of a specimen at the time failed to reveal the presence of tubercle bacilli. There was no family history of tuberculosis, neither was there personal history of syphilis.

Examination.—Nose normal; pharynx catarrhal and hyperemic; larynx infiltrated, particularly left side of epiglottis, rendering examination of vocal cords difficult. There was ulceration along the margin of left vocal cord and slight abrasion of left arytenoid and ary-epiglottic fold. The whole larynx was bathed in mucu-pus. No rales in chest, but bronchial breathing, particularly on left side, with prolonged expiratory murmur. Dulness on percussion over left upper lobe anteriorly. Vocal exaggeration so far as could be discerned from imperfect condition of voice.

As the larynx presented the most prominent symptoms, the treatment was mainly directed toward the relief of that organ. This consisted of the daily use of an alkaline spray, followed by one of menthol in alboline 5 per cent.; and also every third or fourth day, in the application by cotton holder of 50 per cent. solution of lactic acid. Following laryngeal treatment each day in the office, the patient took inhalations, first, of hot air, and second, of mentholated air. Internally compound syrup of hypophosphites was given; also during the summer, cod liver oil, iron and creosote.

*Read before the American Laryngological, Rhinological and Otological Society, at the annual meeting in Lexington, Kentucky, May 1st, 1903.

Of course this part of the treatment varied from week to week according to circumstances.

By May 12th the patient had improved considerably. The voice was still aphonic, but the infiltration had abated somewhat; the larynx was cleaner, and the ulceration on the cords looked healthier. Swallowing was easier; night-sweats had ceased, and respiration was freer. Appetite had improved and the temperature never rose above 99 1-5. Weight had increased to 123 pounds.

On May 13th he had a chill, followed by rise of temperature to 103 3-5 deg. In a couple of days this abated, and symptoms were favorable again.

By June 5th the condition had improved so much that I sent him to Dr. Powell, examining officer for the Gravenhurst Sanatorium, with the hope that he would be admitted into that institution for the summer months. The doctor wrote me in reply that the sanatorium was open only for cases in the first stages of tuberculosis; and that as a consequence my patient was ineligible. He found considerable deposit in the right apex, extensive consolidation in the left apex, and down the posterior side of left lung as far as the seventh rib. The condition of the larynx and bad heart also combined to make the case altogether too hopeless to be admitted.

Failing to get in, the patient, on my advice, secured a tent, and put it up in his back garden. Here he tented for a month. Then he went to Muskoka, took the tent with him, and occupied it from that time on until November. In the latter month it was very cold, and having no stove with him, he each night carried a heated brick from a neighboring house to warm his bed before retiring. The following morning he would sometimes find water frozen an inch thick in his tent when he rose to dress. Notwithstanding this, his health improved; and on returning to the city I advised him to put his tent up again in his back-yard, place a little stove in it, and live there all winter, which he did.

During that winter he came occasionally to the office for treatment. All I did for him was to repeat the menthol spray to the throat and order a continuance of the tonic treatment.

By May, 1902, or eleven months after he was refused admission into the sanatorium, although still voiceless, he had so far improved, that on examining him again, Dr. Powell advised that he be admitted. His weight was then 130 pounds. At this time tubercle bacilli were found in the sputum.

Mr. T. D. remained at the sanatorium until November last, a period of six months, when he returned to my office with a letter from the house physician, Dr. Elliott, stating that the patient had passed an excellent summer; still further increasing in weight; that his lungs had materially improved; that the expectoration had

become less, and that very few bacilli could be found in the sputum. He had a chest expansion of over three inches. During the last three weeks, however, infiltration in the larynx had increased, and stenosis was becoming very severe. He closed by stating that relief from impending suffocation was urgently required.

On examination I found the patient's hands cold, his skin cyanotic, and his breathing labored and stertorous. These symptoms were said to be much worse at night-time.

On using the laryngoscope I found the epiglottis right down to the tip enormously infiltrated, particularly on the left side. It was tilted backwards hiding completely the arytenoids and vocal cords from view.

It seemed to me that the only possible relief that could be given would be by tracheotomy, and that this measure was justifiable, in view of the fact that the lungs presented so few urgent symptoms. I was well aware that some authorities, particularly the late Lennox Brown, disapproved of opening the trachea even in the worst cases, and it was with some trepidation that I ventured to operate. The hope was, as there was little expectoration from the lungs, that the cough would subside; and that the larynx, being freed from the irritation of breathing, would be benefited by the complete rest which tracheal respiration would insure. Hence on November 10th, 1902, I did tracheotomy, Dr. McDonagh kindly assisting, with Dr. Kerr as anesthetist.

There are several points in connection with the operation that I would like to mention. Although a high tracheotomy, it was an unusually difficult one, owing to the low position of the larynx, and the fact that the lower end of it and the trachea seemed to tip backwards deeply into the neck. The first point will be noticed in the accompanying photograph.

The after-effect was that the fenestrum in the silver tube used came directly below the cricoid instead of into the trachea; and whether from pressure upon the open edge of the tube, or the presence of tubercular disease in the cartilage, part of it sloughed away, leaving a notch in the lower side of the anterior margin of the ring.

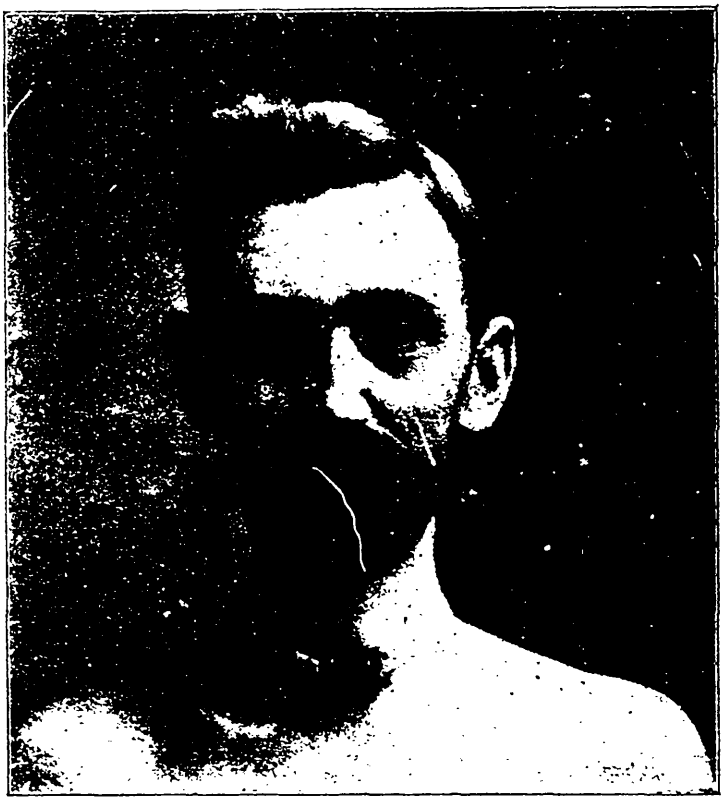
When I discovered the sloughing, I tried different rubber tubes; but the fenestrum even when farthest removed from the external end, always seemed to do harm. Consequently, I finally discarded the fenestrated tubes altogether; and the one he has worn now for two months or more has no opening in its upper side.

From the time of the operation the laryngeal symptoms slowly improved. Still, the temperature occasionally rose to 100 degrees, and several times he had night-sweats; though I think these drawbacks arose mainly from the difficulty in procuring a thoroughly satisfactory tube.

Other treatment was practically nil—the objects being to give

the larynx perfect rest, and to build up the system by an abundance of nutrient food. His room was well ventilated and there was evaporation of moisture from a pan of hot water. This, however, was so slight that I do not believe it affected the case materially. The only throat treatment was an occasional spray of five per cent. menthol in alboline.

For some time he continued to run down in flesh, and it was not until he got thoroughly adjusted to the new condition of things that this ceased. He then weighed 125 pounds.



Taken in May, 1903. Weight 140 lbs., before starting for Muskoka.

From that time onward, although winter, he went regularly out of doors; fever abated and practically disappeared; expectoration through the tube and throat became less, and he steadily gained in weight.

Present Condition.—He still wears the tube. If taken out, the stenosis is too great to admit of reasonable respiration. When he closes the tracheal opening with his finger he can speak in an intelligible guttural tone. For many weeks his temperature has at no time been above the normal. He sleeps and eats well, and

has no difficulty whatever in swallowing. His weight is 140 pounds, as heavy as he ever was in his life. Recent microscopical examination of the discharges through the external opening and from the throat, being the accumulations of over twenty-four hours, were negative. No tubercle bacilli could be found. The patient manages the tubes himself without any difficulty, and takes one or both out for cleaning purposes whenever required.

The infiltration of the epiglottis has very much diminished; but the left side which was so enormously infiltrated, has shrunk to less than normal size. The whole organ is shortened in length. At the same time it has contracted horizontally backwards and downwards, so that it still completely hides the vocal cords from view. There are no visible ulcerations, neither is there any appearance whatever of cicatrix. The muco-purulent secretions around the larynx have almost disappeared.

The patient has again taken his tent up north to Muskoka and purposes spending the summer there. When he returns, my present intention is to attempt the removal of the laryngeal stenosis by the use of graduated intubation tubes.

Perhaps one or two other results of observation, in treating this case, are worthy of notice.

First, the facility with which oleaginous sprays enter the larynx. When treating the patient at my office, I have frequently taken out the entire tube, cleaned and dried the opening into the trachea, and then with compressed air and the down tip, sprayed the larynx with mentholated alboline, instructing him to inhale at the time. While in the act of spraying, the oil would trickle out of the opening and down the neck. This would invariably be the case if the spray was at all profuse.

Second, although we all admit that the moisture of the nose is requisite to prepare the air for respiration, yet this man, suffering from combined pulmonary and laryngeal tuberculosis, has for nearly six months breathed practically dry air into his trachea, not only with impunity, but with actual benefit to his tubercular condition. Not only that, but although I have had the tube out dozens of times and examined the parts carefully, I never found the trachea or even the passage to it in a dry or irritable condition.

Third, while in a case like the one I have had the honor of reporting, tracheotomy is the best, and, perhaps, the only means of affording relief, yet in the majority of cases of laryngeal tuberculosis, it would be too hazardous to be worthy of trial. When cough does occur it is very convulsive, ineffectual, and distressing to the patient; and I can readily believe, from watching the course of this case, that in severe pulmonary disease, attended by copious discharges, the distress produced by coughing and expectoration would be only aggravated by the presence of a tracheal tube, and in such instances, tracheotomy would be worse than useless.

THE X-RAY IN SARCOMA, WITH CASE.*

BY CHARLES R. DICKSON, M.D., TORONTO,
Electro-therapist to Toronto General Hospital, Hospital for Sick Children, and St. Michael's Hospital.

THE case to which I desire to draw your attention quite briefly presents many interesting features and affords much food for reflection. The diagnosis is still an unsettled question, although I have called it sarcoma in common with some of my confreres.

J. D. P. M., suffering from typhoid fever, was admitted to St. Michael's Hospital, Toronto, on October 8th, 1901, under the care of Dr. H. B. Anderson.

On account of a case of smallpox unexpectedly developing in an adjacent ward, he was vaccinated on November 16th. About ten days later, boils appeared on different parts of his body, including his head, fifteen or sixteen at a time, and disappeared under treatment.

A lump then made its appearance on the right side of his chest; was treated and disappeared shortly after leaving the hospital on December 23rd, 1901, but on the last day of December, 1901, it returned. He re-entered the hospital, and at the request of Dr. Anderson, Dr. G. A. Bingham removed the tumor in February, 1902. On account of recurrence a second operation by Dr. Bingham was necessary two months later, in April, 1902. After a further interval of about two months the tumor again appeared. Several physicians were consulted, and a variety of opinions expressed, both diagnostic and therapeutic. Dr. Forbes Godfrey, of Mimico, suggested that the X-Ray be tried, and referred the patient to me for that purpose, stating that his previous history was good, nothing tubercular, nor specific (gonorrheal or syphilitic) could be discovered, that he had saturated the patient with iodide of potash without effect; and that his mother had died of cancer of the stomach. The patient is 47 years of age, married, and a commercial traveller.

On June 26th, 1902, the patient came to my office, erroneously ascribing all his trouble to the vaccination, an unfortunate habit with many of the laity. Cicatrization was complete. The tumor which was about four inches across, and not much elevated, extended from the lower border of the third rib at its junction with the costo-sternal cartilage, was firm in consistence, and very sensitive to the touch, the skin and underlying tissues being adherent to the ribs beneath.

The first raying was done on June 26th, 1902, with a medium hard tube at about eighteen inches distance for twenty-five minutes

*Read at meeting of the Ontario Medical Association, Toronto, June, 1903.

every second day for five times, when constitutional disturbances manifested themselves; elevation of temperature, loss of appetite, malaise and diarrhea. The tumor also became softer, and a mild erythema developed. Appropriate medication was resorted to, and the raying desisted from for ten days. Then, after three more rayings at similar intervals, the lower extremity of one of the cicatrices broke down and a "gluey" discharge occurred. After two further rayings Dr. Godfrey, on examining the tumor, reported that he considered it reduced 50 per cent. in size, *i.e.*, on July 24th, less than one month after inception of raying.

On July 30th and August 1st, on account of a moderate ray dermatitis, the static brush discharge was employed in lieu of the ray, but by the 6th, the dermatitis having disappeared, the ray was again used, and also six times again in July at longer intervals—three to five days—and for twenty minutes at a time, and this was the usual duration thereafter.

In September he was rayed seven times and erythema again becoming troublesome, the brush discharge alone was employed on the 29th, and again eight times in October, in which month the ray was used thrice only, and then with a very weak tube, for local use. There were two rayings on November 13th and 15th, then a long intermission to recuperate, as the tumor was discharging pretty freely.

On January 9th, 1903, he reported that the tumor again broke down on December 5th, and in four days there was a cavity "about the size of your fist," which in a week was much smaller, and on December 29th had filled up level with the surrounding tissues. He was able to go on the road again, and put in nine and a half days work for the first time in over a year. He used thermofuge, and latterly linseed over the discharging sinus. There is little discharge now.

He was rayed ten times in January, 1903, for twelve minutes each time, and the same thereafter, and directed to call for an occasional raying as a measure of safety. In March he was rayed twice, and twice again in May, a total of rayings of forty-three times.

While I do not consider the case absolutely cured, others do. I think that much has been accomplished, and that the prognosis is most favorable. In a letter received two days ago, he says he never felt better in his life.

Among features of interest in this case, I may mention the following: How plausible, and yet how unfortunate is his associating his vaccination with the appearance of the tumor, an erroneous conclusion often arrived at with far less occasion.

As to the nature of the tumor, Dr. Bingham tells me it was quite superficial and unattached to rib or cartilage; that the second tumor removed was larger than first.

Dr. Anderson could find no microscopic evidences of malignancy in specimens examined. The failure to respond to very free administration of iodide of potash would cast a doubt on the specific theory. What then was the nature of the tumor?

Another interesting feature, and one very frequently encountered when raying, was the early evidence of auto-infection, after one week of raying. Another was the fact that the cicatricial tissue gave way before the comparatively sound surrounding tissue; this also is a frequent occurrence in raying over cicatrices, and should be borne in mind. The attention of patients should also be directed to the possibilities of auto-infection, and forewarned thereof, lest they be needlessly alarmed when such symptoms appear.

Another feature of interest is that on account of the breaking down of the tissue being externally the character of the discharge could be observed, showing colloid degeneration. The discharge appeared after three weeks of raying.

Also of interest is the gradual and steady gain in weight in spite of all the patient went through. Dr. Godfrey, who has been a very interested observer, has kindly given me the following notes from his weight book: 1902, June 24th, 174 pounds; August 20th, 181 pounds; September 23rd, 183 pounds; November 9th, 184 pounds; December 14th, 185 pounds; 1903, January 8th, 190 pounds; May 20th, 192½ pounds.

A Medicine Slot Machine.—Automatic machines called "everybody's doctor" are soon to be installed in the principal streets of Paris. By putting a penny in the slot, remedies may be obtained for sick headache, coryza, lumbago and toothache. Each machine will contain twelve slots, at the head of which is written the condition for which each remedy is indicated. This system has received a certificate from the Paris Medical Faculty. Naturally the plan is opposed by physicians.

Rheumatism Cured by Bee Stings.—The sting of a bee has long been regarded by the poorer agricultural classes of Europe as a cure of rheumatism. Dr. Perc, of Marburg, Germany, has recently been advocating its efficacy before a brilliant gathering of physicians, to whom he declared that he thoroughly tested the treatment and demonstrated its efficiency in 500 cases. If a bee stings a person suffering from rheumatism, the stung part does not swell, until the bee poison has been frequently introduced, when the rheumatic pain vanishes. Dr. Perc's mode of procedure is to allow his patients to be stung at first by a few bees, gradually increasing the number. Dr. Perc asserts that by this treatment he has cured patients suffering from obstinate and most painful rheumatism.—*Med. Record.*

Surgical Pathology.

IN CHARGE OF . . .
THOMAS H. MANLEY, M.D.

STENOTIC OBSTRUCTION OF THE LARGE INTESTINE.

BY THOS. H. MANLEY, PH.D., M.D., NEW YORK,
Visiting Surgeon to Harlem Hospital; Professor of Surgery, New York School of Clinical Medicine.

TREATMENT: PALLIATIVE AND RADICAL.

WHILE we cannot fail to note the striking contrast in the etiology and pathology of stenosis in the large and the small intestine, yet in extreme cases of either its radical treatment is on similar lines. In the former, however, there is seldom imperative urgency, time is permitted to critically study the case and work out the best plan for operative procedure; while in the latter immediate and decisive action is necessary for the adoption of such a course as is best calculated to relieve suffering and prolong life.

Palliative, Tentative Measures.—Always mindful of the possibility of error in diagnosis, of the wonderful powers of nature to overcome simple stenosis of every variety, the latency, insidiousness and chronicity of various types of cancer of the large intestine, and, moreover, not closing our eyes to the large mortality following surgical intervention, we will do well, in a considerable number of these cases, especially in old people, or if doubt exist, to first patiently and perseveringly test the efficiency of such therapeutic measures as will in no manner jeopardize life and may possibly effect a cure.

Eight years ago a physician brought to me, for examination, his father, who had for some years back been suffering from tenesmus, with frequent sanguino-mucoid discharge from the rectum. The gentleman was a preacher of the gospel, of good physique and enjoying vigorous health, sixty-two years old, of good habits. About two inches from the anus I came on a hard, stony growth in the posterior and lateral walls of the rectum. There did not appear to be any sigmoid impaction. My prognosis, of course, was sombre, and early excision was advised. But the advice was declined, no operation has been done, and he, now in his seventieth year, still occupies his pulpit. I am entirely at a loss to understand how he has survived, though possibly my diagnosis of cancer

was an error. This case well bears out the view of Fitz as to the remarkable chronicity of pipe cancer in elderly people.

Inflammatory changes and spasm commonly attend the propagation of cancer of the bowel. Psychological impressions, as well as various sedative remedies, powerfully influence this phenomenon. Hence, however unfavorably a case may impress us, we should always endeavor to inspire confidence and hope. We may then turn to constitutional and local remedies.

Sedatives, local and constitutional, are of the greatest value, opium being well to the front. Packard notes the useful virtues of eserine one-fiftieth gr. doses. Belladonna, because of its relaxing effect on smooth muscle, is said to be highly efficient. Assafetida, in hysterical cases, blended with other sedatives is highly useful. Laxatives are usually ruled out, but small doses of opium and calomel may effect a large, free and painless motion when other medicaments have failed.

Quicksilver.—McKean Harris records two remarkable examples of success with the employment of quicksilver. One of his patients was sixty, the other eighty. In the first, high enemata and hot stupes had failed; the extent of abdominal distention was great. A half pound of quicksilver was given, this was followed every hour by a grain of opium. The next day the patient had a large evacuation with complete relief. The second case was a desperate one; the same treatment instituted with free and full evacuation on second day. In neither case did salivation follow. Harris recommends this weighty charge in those who refuse operation, or who are not in a physical condition to sustain it. Hot stupes, kneading the abdominal walls, massage, inunction of mercury or electrization are all, judiciously employed in appropriate cases, valuable adjuncts in treatment.

I have found that the well-oiled, warm hand, by deep but gentle kneading over the course of the colon, gives great relief It stimulates the languid bowel to fresh contraction, subsequent ease succeeding from the escape of gases.

Rectal enemata and instrumental dilatation are most helpful means of relief in practically every variety of fecal stasis depending upon a contraction of the bowel. Their employment, however, must be governed by a judicious discrimination. Warm medication, oleaginous or saponated clysters are useful and afford great relief, quite regardless of the site of the stricture. They tend to overcome spasm; more or less of the fluid passes beyond the stricture or occlusive agent, in this way clearing the passage of scybalous plugs of feces, and thus permitting of a later escape of softened excrement and gases; with the discharge of the enema, large audible gusts of wind escape from the anus. The passage of the fecal elements tends to keep the lumen of a narrowed intes-

tine open. The injection of fluids not only cleanses the bowel, but also, in a measure, widens the strictured part.

We will do well here to employ the long, stiff, rectal tube with caution, lest we inflict serious harm. The following case illustrates this: A bartender was seized at midday with severe colic; being constipated, he took an injection, but without relief. When the physician was called he gave him a "high enema" with the long tube; but his alarm was great when he discovered that it only increased his patient's agony, and none of the fluid came down.

At ten the same night, I made an abdominal section. A large hole had been punctured through the free loop of the sigmoid, and the peritoneal cavity was widely distended by soapsuds, sweet oil and the feces. He sank before midnight.

Nor should we overlook the enormous energy of hydraulic pressure when we charge the colon by the piston, irrigating bag or other means.

A young carpenter came under my care at Harlem Hospital last spring, who, to simplify things and save trouble, fastened a rubber tube to a faucet in the bath-tub, lay down, passed the nozzle up his rectum, and let the water on. "All of a sudden," he said, "I felt something burst in my stomach." He quickly pulled the tube out, but too late; his agony was so great he was unable to leave the tub. He was immediately brought to the hospital in mortal shock, to die three hours later. On autopsy a large rent was discovered on the upper surface of the transverse colon, and the peritoneal cavity was found to contain fully two gallons of water with an admixture of feces.

Dilatation of any segment of the long intestine except the rectum, by bougies or sounds, is a reckless proceeding, and in cancerous infiltration it can be only productive of much harm or grave consequences; but in tubercular, syphilitic or gonorrheal stricture of the middle or lower third of the rectum it is often a very efficient agent, both for relief and sometimes cure, but we should not resort to it if the mucous membrane is either inflamed or ulcerated, and those which are not so complicated are very few indeed. Tierlink advises the rejection of rigid sounds here, "because their introduction is not without danger to the intestines."

I have seen mortal shock follow the forcible, vainless effort of canalization of a scirrhus in a firmly strictured rectum.

Operative Treatment: Artificial Anus, Resection Anastomosis.

The basic principle of the operative treatment of stenosis of the large intestine, and for other tubular lesions, has undergone remarkable changes of late years; nevertheless in advanced cases when stercoremia exists, when the patient is starved to emaciation,

and when he is quite worn out by pain and loss of rest, and is in a settled despondency, all operative intervention has a harrowing mortality.

Artificial anus in former times was the only relief possible for all these unfortunate cases; it has and always will hold a position of prime importance as a last resort and a relief measure, but it leaves a loathsome condition. There is commonly a tendency to closure of the fistula or a prolapse of the intestine outward.

In malignant disease of the large bowel, or that type which restricts us to tapping the colon, the site of the artificial anus is determined by the location of the disease; if in the rectum or sigmoid, the descending colon is chosen; if in the ascending or transverse colon, the ascending segment, if the cecum or first part of the ascending colon, the gut is drained direct from the site of blockage.

Fortunately in a considerable proportion of cases of annular scirrhus of the colon, the disease is strictly limited to the wall and has not spread through the lymphatics to neighboring structures; at the point narrowed the gut looks as though reduced by a hard circular cicatrix, much like an artery ligatured in continuity, the mucosum, the cellular and muscular layers have been quite totally destroyed, and little more than a hard knot of cartilaginous consistence remains. But there are several other pathological conditions leading to intestinal stenosis which are not malignant. For some of these and annular scirrhus, resection and anastomosis have come to supplant the antiquated procedure of artificial anus; and, for many varieties of cancer not permitting of excision, we now resort to side-tracking, or exclusion by anastomosis.

Spontaneous Anastomosis.—By observing the unaided efforts of nature to relieve herself in this class of cases, we may gather a few very significant hints, and we may imitate her modes of effecting relief with the most signal benefit.

We find scattered through records on pathology, through revelations on autopsy, as well as illustrative instances on the living body, examples which point the way to effective relief in intestinal obstruction by an automatic mechanism, devices by which fecal blocking is overcome and the continuity of the bowel restored by adhesions and a free opening of one hollow viscus into another. The following are a few illustrative examples: Treves saw an instance of the jejunum opening into the transverse colon; Bland Sutton, another of what he terms "an accidental anastomosis"; Guyon, one of the ileum and the transverse colon; Boas, one of a similar character; Hausmann, two ileocecal anastomoses; Lacrozez, four cases, fibrous bridles reinforced two. I have seen two instances myself in which the imprisoned feces of the colon by adhesions had established vicarious channels for escape—one

of stricture of the splenic end of the colon, the cardiac end of the stomach being opened; in the other, an old physician, the bladder was opened. Talma's case belonged to this class, as well as one from Dr. Reeve's group.

Anastomosis, transplantation or carrying the loop of gut from the afferent end of stenotic part to some point beyond, joining it with the free coil of the sigmoid, or rather bringing the divided ileum over and anastomosing it at once with the sigmoid, is the ideal procedure; it relieves all strain and gives a free outlet to the excretory elements by a route entirely under control. It is true that this procedure quite completely excludes any digestive action on the part of the large intestine and leaves the local lesion untouched. Theoretically viewed, we can conceive many objections to this mode of short-circuiting an over-distended crippled colon, but when we recall that it is utilized mostly in malignant disease as a substitute for artificial anus, it becomes a most acceptable substitute. Hennequin anastomosed the ileum with the sigmoid for inoperable cancer in a military officer. Immediate relief followed, with full recovery of health later.

Resection with anastomosis in stenosis of the colon has, of late years, become a well-established operation. Terrier has successfully removed the cecum, the ascending colon and the proximal half of the transverse colon for a cancerous growth, bringing up the ileum and anastomosing it with the remaining loop of the colon; the following day there was free movement *per anum.* The patient left the hospital on the thirty-seventh day after operation, having gained 4 kgr. In the medical literature of America and Europe, a large number of similar operations are recorded, and from year to year this number is growing, the ratio of successes steadily augmenting. One surgeon of large experience says that in the last quarter of a century the mortality in operations on the large intestine has been lowered from 50 to 20 per cent. Bennett, however, writing in 1887, denied that "up to that time resection of the bowel could boast of but few successes;" but since that date no single division of operative surgery has achieved more notable triumphs, though fifteen years ago it was little more than in its experimental stages. Tierlink observes that "surgery alone can deal with tumors or stenosis of the sigmoid."

Florence Nightingale in Her Old Age.—Florence Nightingale, whose eighty-third birthday occurred last month, is spending her old age in Hampshire, England. She received her education in Germany, and the Empress Friedrich subsequently became one of the most ardent supporters of her ideas regarding woman's work in war-time.

Selected Articles.

URETER-CATHETERISM: ITS PURPOSES AND PRACTICABILITY.*

BY BRANSFORD LEWIS, M.D., OF ST. LOUIS,
Professor of Genito-Urinary Surgery, Marion Sims-Beaumont Medical College; Genito Urinary Surgeon to Rebekah Hospital, City Hospital and Female Hospital.

THE purpose of ureter-catheterism in connection with the cystoscope are two-fold—for diagnosis and for treatment.

Diagnosis.—A. To locate the origin of pus, blood, tubercular products or bacilli, the various pyogenic infections, abnormally desquamated epithelium, etc., as to whether they come from (1) the bladder, (2) the right ureter, (3) the left ureter, (4) the right kidney, (5) the left kidney, (6) the right or (7) the left perirenal space, and communicating with the corresponding kidney or ureter.

B. To recognize and locate obstructive conditions in the right or left ureter from (1) stricture, (2) stone, (3) adjacent tumors, (4) bend or kink in the ureter from movable or dislocated kidney, (5) valvular junction of ureter and its pelvis.

C. To determine (1) the presence of two kidneys, (2) if only one, which is absent.

D. To determine the number of ureters present.

E. To determine the functional activity of each kidney separately and relatively, with respect to its excretion of urea, albumen, quantity of urine, the specific gravity, etc.

F. To determine the size and capacity of each kidney pelvis with respect to (1) hydronephrosis, (2) pyonephrosis, (3) total obliteration of kidney-secreting tissue.

G. If there be kidney disease present, to determine (1) if only one kidney is affected or both; (2) if only one, which is the affected one; (3) if both, which is the one more affected; (4) if removal of the worst one be advisable, is the other one able to carry on kidney function sufficiently? (5) if removal of one be advisable, and the other is capable of supporting life, will the operation remove the infection from the body, removing the possibility of dissemination or recontamination?

Treatment.—A. To enlarge narrowings or stricture at (1) the ureter openings or (2) in the channel of the ureters. By facilitating drainage through the increased ureter-caliber, thus ob-

* Read before the Mississippi Valley Medical Association, October 15th, 1902.

tained, to assist in the improvement of pyelitis, or pyonephrosis, unilateral or bilateral.

B. To irrigate and medicate (1) the ureters ; (2) the kidney pelves of one or both sides.

C. To assist, by anesthetizing and enlarging the ureter opening, the passage through it of a calculus or a plug of pus, blood, etc.

D. To use the ureter, after it is catheterized, as a guide in certain abdominal and pelvic operations.

E. By prolonged catheterization of a ureter to assist in the cure of ureteral fistula.

To give some indication of the practicability of ureteral catheterism, as well as its clinical advantages, I wish to refer briefly to some of the cases in which I have used it.

CASE 1.—*Supposed Ureteral Calculi; Erroneous X-Ray Diagnosis.*—G. E. P., male, aged thirty-five years, attorney, consulted me, on the advice of his brother, a practitioner of Chicago, in May, 1902. He said that he had recently experienced some return of symptoms that had been with him some three years ago, frequency of urination, etc., that were finally diagnosed as indicative of stone in the bladder, for which he was operated by the crushing method. This removed the stone but not the inflammation, and during the past three years he has had more or less of the irritative symptoms. I found no organic lesion present, and was giving mild, antiseptic treatment which was doing good, but on a trip to Chicago he was induced to have an X-Ray photograph taken of his abdomen, on the suspicion that it might be a return of the calculous deposit. What was his surprise and horror to be shown the shadows of three stones, evidently lodged in his left ureter, as the photographer explained to him. This was somewhat of a poser to me, when he recounted it to me on his return; nevertheless, as I had failed to notice any indications of the presence of urinary calculus at any point, I refused to be convinced without further evidence. While he thought it useless to make the test, since the stones could be plainly seen in the negative, he acceded to my suggestion of ureteral catheterism. Under cocaine anesthesia, with my instrument, in about five seconds after entering the bladder I passed a flexible catheter into the left ureter (the one supposed to contain the stones) on up as far as the renal pelvis; not a particle of obstruction nor of scratchy feeling was perceptible, and the urine drained from that side during the next ten minutes was as clear as crystal. There was an immediate and complete disproof of the accuracy of the X-Ray finding, and a large degree of relief to the troubled mind of the patient. I later had the satisfaction of an acknowledgment of similar import from the photographer, who thought it must have been "cherry stones," possibly lodged in the colon over the ureter.

Case 2.—*Chronic Unilateral Pyelitis and Cystitis; Pelvic Irrigation.*—A. J. M., male, aged twenty-eight years, street-car conductor, referred by Dr. Y. H. Bond in November, 1901. Following on an incompletely cured attack of gonorrhea of two years previously, the patient had noted certain pains and dull aches in the bladder and perineal region that were growing and becoming a serious interference with the carrying on of his employment. I gave tonic treatment to his prostate, vesicles, and bladder, the organs which seemed to me to be at fault, attempting to eliminate a bacterial infection of colon bacilli with internal and local antiseptics, and giving periodic massages and hot rectal siphons. This was continued during November, December, and the following January with unsatisfactory results—only moderate improvement, at best. In February, 1902, more because of the rebelliousness of the condition than anything else, I suggested ureteral catheterism, in order to learn if the infection reached higher than the bladder. On February 25, at my office, under cocaine anesthesia, I catheterized the right ureter and drained good, clear urine therefrom. On March 26 I again catheterized the same (right) ureter with the same result—clear, healthy urine. On April 14 I catheterized the left ureter, and obtained definitely cloudy urine, containing pus and actively motile colon bacilli. Before withdrawing the ureter-catheter, but after removal of the cystoscope, I washed out the kidney pelvis with hot 2 per cent. boric acid solution, repeatedly running it in and out by means of funnel and rubber tubing. On May 7 I again catheterized the left ureter, finding the urine much clearer than on the previous occasion; and the boric irrigation was repeated. The same measures were carried out again on May 14, June 2 and 19, each time showing marked improvement in the urine in its clearness and freedom from infection; and the various symptoms for the first time had been ameliorated to a satisfactory extent. Each time after catheterism the patient went from my office to his work, which he was enabled to resume with energy and ability. He was discharged from further treatment, and has needed nothing of the kind for a number of months.

This was a case of bacterial infection and irritation, not only of the bladder and urethra, but also of the left ureter and pelvis; and as rapidly as the infection of the urethra and bladder was removed, it was just as quickly renewed from the infecting focus above. With this removed by the ureter washing, the whole case was cleared up and relieved. I have noticed in such cases of bacterial infection that one must be vigilant and persistent for some time after the disappearance of the bacteria, as they are prone to recur even after having been cleared up a number of times.

I have had two other cases—one male, the other female—that were the subject of unilateral pyelitis chronica that were

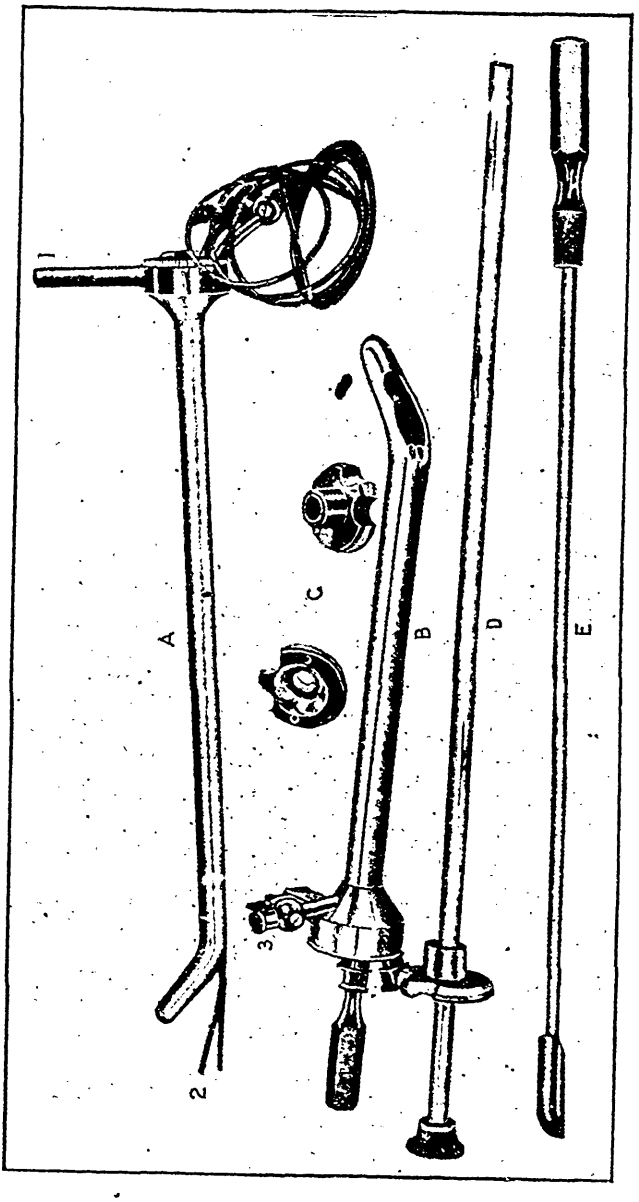


FIG. 1.—A, Male ureter-cystoscope; B, female ureter-cystoscope; C, windows of both; D, periscope or telescope; E, obturator of male instrument. 1, Handle for electric connection; 2, cathetors projecting from ureter-tubes; 3, air-tube and cock.

markedly improved by similar pelvic washings. I have not yet seen any serious consequences ensue from ureteral catheterism; and I am the more convinced and gratified at this fact since I have had some experience with tuberculous infections of the urinary organs, that *noli me tangere* of this field. If there is anything that may be counted on to do harm to tuberculously inflamed urinary organs it is local instrumentation. And yet the records of the following two cases fail to indicate any harm done, and, on the contrary, recite extremely gratifying results for tuberculous processes.

Case 3.—Mrs. H. S., referred by my friend, Dr. Goodner, of Nashville, Illinois, came in January, 1902; aged twenty-five years. To rehearse the endless symptoms and agonies suffered by the patient afflicted with active tuberculous inflammation of the bladder and other urinary organs is scarcely necessary here; but this poor woman had her share of them. The symptoms began two months after marriage, in 1893. Without any vaginal discharge, she noticed rather rapidly increasing frequency in urination, and, as she expressed it, she could not hold the urine at all in a short time thereafter; there was much sediment in the urine, and often it was quite bloody, or the dripping of pure blood at the end of urination. There was some pain in the back on the left side, passing thence down into the left hip. She lost in weight, and at the time of her arrival in the city she looked cadaverous. The mixed urine taken from the bladder contained both blood and pus, as well as many tubercle bacilli. Cystoscopy with a Nitze instrument proved a failure because of the rapid clouding of the fluid medium; but with my own female cystoscope I not only discerned tuberculous ulcerations in the bladder mucous membrane, but succeeded in catheterizing both ureters successively. The urine from the right side gave pus, blood and tubercle bacilli in abundance, whereas that from the left side showed only moderate involvement in the inflammatory process, and we could not find any tubercle bacilli in it. Iodoform oil injections into the bladder were used regularly for a time. There was such decided amelioration in the symptoms and improvement in the general condition, clearing of the urine, etc., that the patient would not listen to any operative procedure, even if I had urged it on her, which I did not, in view of the improvement. If we could have eliminated tuberculous infection of the bladder and the other kidney, the removal of the tuberculous right kidney would have been the procedure of election. But since the bladder was proved to be involved, I deemed it best to try general tonic treatment combined with the iodoform injections mentioned. My last report from the patient is that she has improved much both locally and generally. Her weight has increased considerably.

Case 4.—*Hemorrhagic Cystitis and Pyelonephritis Bilater-*

alis.—This case shows the difficulty and uncertainty of diagnosing the source of hemorrhage from the urinary tract in some cases. I have on a former occasion reported a case of renal hemorrhage that gave symptoms and indications that led to the positive but erroneous diagnosis of the vesical neck as the source of origin. F. L. I., aged twenty-eight years, a storekeeper, male, was referred to me by Dr. W. H. Stauffer, of this city, on March 31, 1902. Following after a prolonged attack of acute primary urethral gonorrhea, there were various heroic measures adopted by the patient's first physician, the final one being a strong irrigation of permanganate of potassium. This set up a severe strangury, excruciating pain both between and during urinations, and the passage of large quantities of blood in the urine, besides fever, chills, etc. On receiving the patient, Dr. Stauffer adopted various soothing treatments, but with only moderate degree of success, and then referred him to me. Because of the depleting agencies present, the patient was extremely weak and anemic. With each act of urination there was spasmodic straining, severe pain, followed by the squeezing out of blood or clots. Strong sedative measures were instituted, absolute rest, hot applications, but no injections or irrigations into urethra or bladder. While moderate improvements resulted, there was persistence of the bleeding and of certain of the symptoms (strangury, etc.), and occasional relapses, so that by the middle of April not enough benefit had been attained to justify the continuance of the measures directed on that line, which had included the injection of adrenalin and of gelatin solution, and the internal administration of ergot. Besides, his anemia was becoming alarming.

Because of the persistence of the bleeding, notwithstanding the freshness and brightness of the blood (which would naturally incline one to think it coming from the bladder only), I began to think that it was coming from a point higher up in the urinary tract. Therefore, under cocaine anesthesia, I introduced my cystoscope on April 20. Free bleeding from the bladder membrane was clearly evident in the neighborhood of both ureter openings. It was so free that no view could have been obtained by one using a lenscystoscope with fluid medium for bladder distention. The fluid would have been clouded almost before the instrument could be introduced, putting an end to the endeavor. With mine, however, and air-distention this made practically no interference, so far as the observation of the bladder was concerned; and when it came to inserting the catheter into the ureter opening, I adopted a manœuvre that was quite successful in keeping the field clear of blood while I searched for the opening. That is, I ran the ureter-catheter beyond the end of the cystoscope, down into the base of the bladder where the blood was collecting in a little pool; an assistant kept up continuous aspiration from this pool by pump-

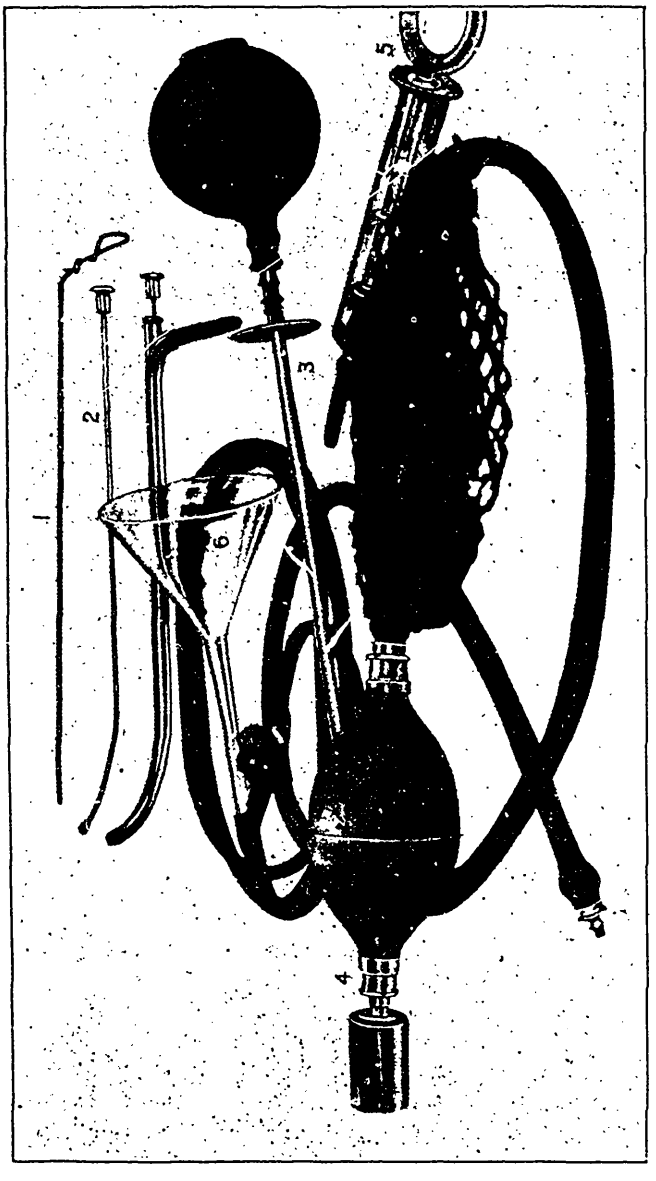


FIG. 2.—1, Aluminum swab or applicator; 2, urethral tablet depositor and obturators; 3, aspirator; 4, inflating bulbs with metal extremity for receiving warm air; 5, syringe; 6, funnel with tubing for irrigating kidney pelves.

ing on the outer end of the catheter while I was searching for the opening. It was easily found ; the catheter was withdrawn sufficiently to bring it in range and run it into the ureter. A small quantity of very bloody fluid was the result, showing that although bleeding from the bladder membrane had been demonstrated, that was not the only source: it was coming also from the left kidney. And, in order to complete the investigation, I catheterized the right ureter two days later, and drained bloody urine from it, too. Hemorrhagic cystitis and pyelitis bilateralis was the more complete diagnosis, then ; and the numerous rod-shaped bacilli (appearing in two ureter urines) gave a clue to the cause of condition : Extension of a mixed infection upward, following a gonorrheal urethritis, possibly superinduced by injudicious medication.

A surprising sequence of this instrumentation was that instead of its making the patient worse, causing renewed chills, etc., marked improvement began from that day, and he gradually recovered from the severer symptoms, while the bleeding, frequency, and other harassing effects disappeared to a large degree. Now there is occasional tingeing of the urine with blood when he has been too active physically, and he is not yet entirely well, but pelvic inflammations of the kind are not prone to get well in a hurry. I recently began the use of boric irrigations into the renal pelves, and have attained further benefit this way.

Case 5.—*Tuberculosis of the Bladder and Both Kidneys.*—Male patient, aged thirty-six years, referred by Dr. Vernon, of Charleston, Mo., consulted me first in December, 1901. He had had an attack of gonorrhea sixteen years before, but the present affection was first felt nine years ago. There had been, in addition to the usual irritative symptoms, a large collection of pus in the urine, urinary frequency, and also occasional attacks of pain in the left renal region, simulating renal colic. I catheterized each ureter successively with local anesthesia and without much inconvenience, notwithstanding the excessive tenderness always present in urinary tuberculosis cases; purulent urine was drawn from each side; and guinea-pig inoculation with each gave positive results, so that tuberculosis of both kidneys was proved; and through the cystoscope tuberculous ulceration of the vesical membrane was apparent. Iodoform emulsion injections, together with guaiacol and cod-liver oil internally, were used in this case also, and have given considerable improvement both locally and generally. Operative interference in this case is out of the question, of course. That was made evident by the ureteral catheterism. If this procedure were always followed out in such cases, we would not hear of one tuberculous kidney being removed while the other one, even worse affected, is left to do the work of two, fails in the undertaking, and the patient dies long before he otherwise would.

CASE 6.—*Movable Kidneys; Unilateral Pyonephrosis; Operative Fistula.*—Mrs. I. S., housewife, aged twenty-seven years. This case illustrates the necessity of making a complete rather than a partial diagnosis of urinary affections, and the difficulties that may follow neglect in this particular. Married in 1894, the trouble began in 1898, with frequency and pain in urination, and the occasional passage of blood in the urine. A surgeon diagnosed cystitis, and for its relief made an opening through the vesicovaginal septum; that opening has been draining ever since, even to the present day. It did not relieve the distress in frequency, nor the pain in the bladder and both lumbar regions; and when she consulted me in March, 1902, she had practically given up her care of her household. On looking into the bladder I could see the fistulous opening, from which the air of my inflation quickly escaped into the vagina. The bladder wall elsewhere was relatively unaffected. Catheterism of the ureters gave, for the right, clear, healthy urine; for the left, cloudy, purulent urine; and tests of the renal pelvis showed that it possessed considerable capacity—was able to hold about a half-ounce of boric solution, the explanation of which was learned when I palpated the lumbar regions. While both kidneys were found to be movable (the right one moderately so), the left one hung far down into the abdomen while the patient assumed the erect posture, and easily slipped back into its proper place on her reclining. In falling downward and forward, it had been in the habit of making a kink in the ureter, obstructing the outlet through the ureter, distending the pelvis, and furnishing the "receptive state" for bacterial invasion that resulted in the pyelitis and incited the various symptoms of which she complained. The indication in this case was, not the making of a urinary fistula, but the anchoring of the two kidneys in their proper place, followed, if it proved to be necessary, by the regular washing of the left renal pelvis. As she had suffered much both from the affection and from previous surgical manipulations—she had been operated on three times for the closure of the fistula, and without success—she could not be prevailed upon to undergo another surgical procedure of any kind, and so carries her condition to the present.

CASE 7.—*Pyonephrosis and Perinenal Abscess.*—Male, aged thirty-nine years, had suffered many years from pain in the back and other symptoms of chronic urinary affection. Because of this and of purulent urine present, the Harris segregator was used, giving comparatively clear urine from the right side but cloudy urine from the left. It was considered from this, by the surgeons who made the test, that there was pyelitis present. Later I was asked to make ureter-catheterism. I inserted the catheter into the left ureter, but it would go in only a part of the way; it was withdrawn and reinserted several times before it finally was

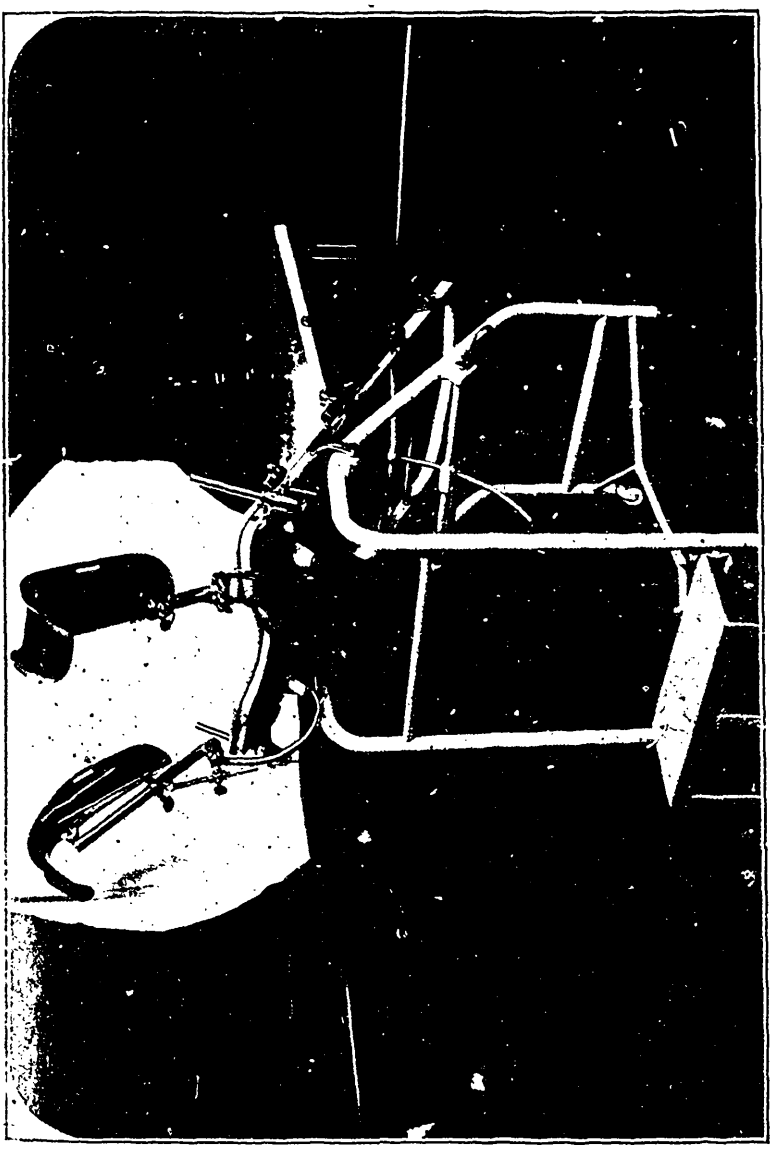


FIG. 3.—The Bransford Lewis genito-urinary and gynecological operating table in position for ureter-catheterization or cystoscopic examination.

pushed up about two inches into the ureter. Even then it did not drain immediately; so, after waiting ten minutes or so, I applied aspiration to the outer end of the catheter and by strong pumping got out *one drachm of pure pus.* Instead, then, of there being simply a pyelitis, there was renal abscess with an imperative demand for operative interference. On operating through the left lumbar region, I found the kidney dilated with over a pint of pus, and a stone in the renal pelvis. The segregator could not possibly have attained the results given thus by catheterism and the strong aspiration. The thick pus was not draining from the ureter, and could not have gotten into the segregator from the ureter, and hence could not have gotten into the segregator tube.

These cases present some of the clinical phases of ureteral catheterism. They do not rehearse anything so very remarkable in the way of results in treatment, etc., but they serve to show that ureter-catheterism, in both male and female, has been reduced to a practical procedure that should rapidly become of great service to the profession. It is no longer an idealistic manœuvre that we hear about but never see, but is one that is accomplished every day by those versed in it, and with the highest degree of satisfaction.

While the complicated and costly European instruments have not done much to popularize the procedure, I believe the simpler ones of American make will soon do the missionary work that will enlist the attention of the profession in the practical nature and value of this field.

While most of the ureteral catheterism that I have done has been accomplished with my model containing only one channel for ureter-catheter, my latest model is double-barrelled; so that with two catheters in place, after inserting the lighter colored one into the left ureter and pushing it far enough into the ureter to keep it from pulling out during the further manipulations, the inner end of the cystoscope is turned towards the other ureter, the remaining catheter (a dark one) is inserted into it in a similar manner; the cystoscope is then withdrawn, leaving the two catheters draining synchronously from the two kidneys. This (synchronous ureter drainage) is of great value, not only in the way of affording immediate results and avoiding repetition of the procedure, but also for comparing the secretions of the two kidneys at the same time and under the same general influences. This feature has been elaborately studied by Casper. By it is determined the relative functionating capacity of the two kidneys, etc.

Technique for the Bransford Lewis Ureter-cystoscope.—Extended descriptions of the previous forms of this instrument having already been given (first presentation before the American Association of Genito-Urinary Surgeons, May 1, 1900, *Journal of Cutaneous and Genito-Urinary Diseases,* 1900, page

120), the present form is easily understood (Fig. 1). Its main points are, an ocular tube, a handle, and a beak containing the small cold electric lamp. The electric contact is made at the handle. An obturator assists in the introduction of the instrument into the bladder, after which it is withdrawn and the ocular window is placed in its stead. This window is the only thing that intervenes between the eye and the object, that is, the bladder membrane, when it is undergoing inspection; there are no lenses, no magnification, no inversion of image, and no fluid to look through or become cloudy and prevent inspection. The lamp is a cold one, so that it cannot burn the membrane even should the two come in contact. The bladder is inflated with air through the stop-cock on one side of the instrument; and there are appended tubes to conduct the flexible silk web ureter-catheters to a point within a half-inch of the lamp, that is, directly to the field of inspection, so that though they are flexible they are under full control of the hand. A late addition to the instrument is a telescope with lenses, that, if one wishes, he can insert through the main (ocular) tube and inspect the membrane with increased field and imagination. Another addition that I think will be more serviceable than this is a telescope with a prism at the inner end, that will enable the operator to "look around the corner," so to speak, especially for the purpose of bringing the hypertrophied prostate or outgrowths from it into view. With this assistance I expect the definite diagnosis of the form of prostatic enlargement to be much simplified.

For the satisfactory use of this instrument it is necessary to have an operating table that is capable of giving high pelvic elevation, with the legs in flexion, for instance, in stirrups. With the patient placed in this position (excepting the pelvic elevation, which is made after the anesthetic is applied), the bladder is washed and emptied with a soft rubber catheter. This washing is merely for antiseptic purposes, not for facilitating the work of the cystoscope. One or two cocaine tablets (one and one-eighth grains) are then deposited in the posterior urethra and bladder neck by means of my urethral tablet depositor (2, Fig. 2). The foot of the table is now elevated to an angle of about forty-five degrees; the cystoscope is introduced, the obturator withdrawn, the small quantity of urine that has been collecting since the washing is sucked out through the aspirator (3, Fig. 2), the window applied to the ocular end, and the light turned on. While the operator is looking through the main tube, he gently pumps in some warm air by means of the inflating pump, and watches the walls of the bladder unfold and expand. A view of the whole interior of the bladder is obtained in panoramic sequence by moving the beak around; and when

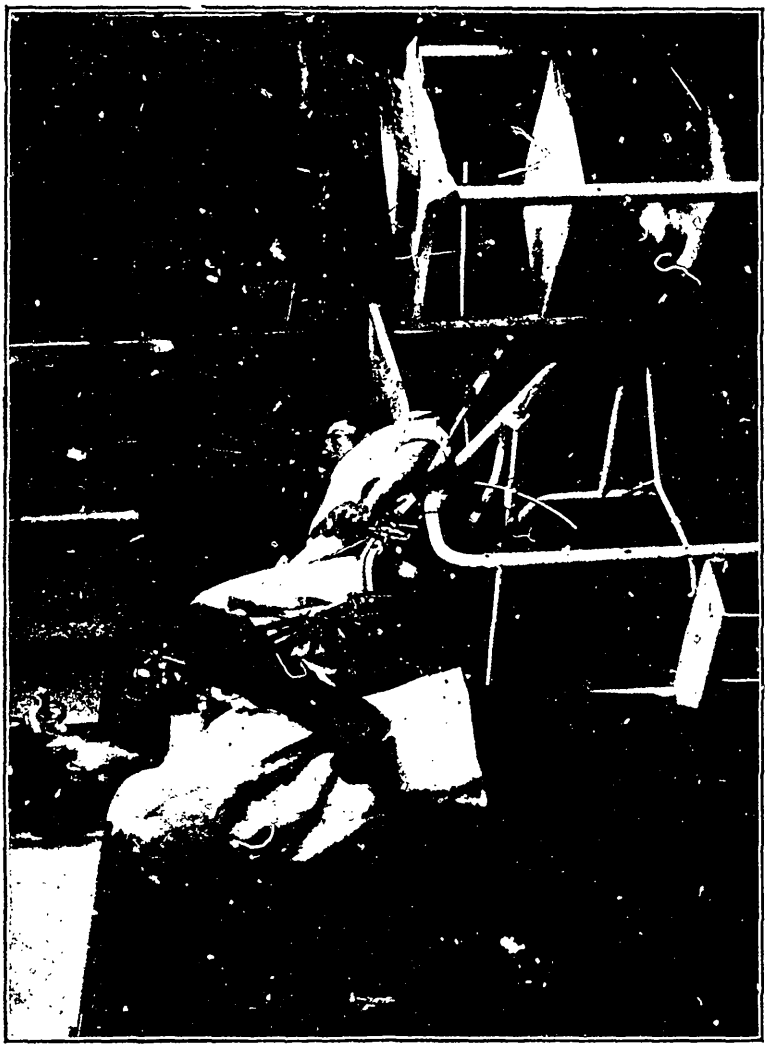


FIG. 4.—Table and patient in position for cystoscopy or ureter-catheterization; pelvis well elevated, legs comfortably supported by the crutches, giving no tendency to slip away from the operator; no strain in any respect.

the ureter openings are looked for they are sought at the upper angles of the trigone. When the little ridge or dimple indicating the location of one is found, the catheter is easily shoved into it, and on up into the ureter. If it is desired to catheterize the other ureter also, the first catheter should be inserted rather far up, to insure against pulling it out in the further manipulations. Then the beak is directed towards the other ureter opening; when it is found, the remaining catheter is pushed into it in the same manner as previously described. The electric cord and the air-pump are disconnected, the air-cock opened, allowing of the escape of air from the bladder, and the cystoscope is removed. Care must be taken in doing this to feed the two catheters into the tubes as the cystoscope is being drawn out, so that when it is removed the catheters are still contained in the ureters, where they may remain and drain the ureters for from ten minutes to a half-hour, according to the amount of urine desired for testing. During this time the patient may lie comfortably on the same table, which has been replaced in a more normal position. If either catheter does not begin draining in a reasonable length of time, gentle aspiration may be made on it by means of the small syringe shown in 5, Fig. 2.

If it is desired to wash out the kidney pelves, that is done after finishing the drainage. A glass funnel with four or five feet of soft rubber tubing attached is filled with hot saturated boric acid solution and connected with the ureter-catheter by a smaller piece of tubing, a piece of glass tubing helping in the transition between sizes, if necessary.

After these several manipulations, irrigations of the bladder should be carried out with some mild, soothing antiseptic, such as warm boric solution.

In the female, examination of the bladder and ureteral catheterism are more easily carried out, both because of the shorter distance to the bladder, and because of the lessened resistance offered the inflow of air. If the clothing of the female is well loosened about the abdomen, on elevating the pelvis and inserting the cystoscope and removing the obturator the bladder usually balloons out without the necessity of inflating with air. In the male, on the contrary, this is not usually the case, although it does sometimes happen where good anesthesia is secured.

One of the most troublesome impediments to easy cystoscopy and ureter-catheterism by this method is that offered by the persistently contracting bladder—a spasmodic condition that is beyond the influence of the patient's will, that holds the bladder walls in a rigid state, resistant to the required movements. This is best overcome by adding to the anesthesia. Withdraw the cystoscope, drain the bladder of accumulated urine, and deposit

one or two more cocaine tablets in the posterior urethra and vesical neck, then reinsert and continue the investigation. While no harm comes from the moderate inflation of the bladder with air, it is a fact that air is slightly more irritating to the membrane than water; but this is especially true of cold air. To obviate this, I am now using warm air, secured by an assistant holding the intake bulb over an alcohol flame during the process of inflation. When the telescope is in use, it is well to pump in the air through one of the ureter-tubes, since the telescope itself occupies the main tube. If at the same time it is desired to remove the balance of the inflowing urine, it may be aspirated through a ureter-catheter passed into the bladder through the other ureter-tube. In several of the cases that I have catheterized, I feel positive that, because of the rapidity of accumulating blood, catheterism could not have been accomplished by means of the lens instruments and fluid medium.

I would not advise any one to attempt ureter-catheterism without sufficient equipment to secure, at least, the necessities of the work; and chief among these is a table that will furnish pelvic elevation. This allows the inflowing fluids or blood to gravitate away from the field of search.

I have been much interested in studying the limits to which one may go in putting cocaine into the bladder without causing a toxic effect. While I have on several occasions noted systemic effect from the use of cocaine in the urethra, I do not remember of ever having observed it as a result of absorption from the bladder, although I have often used five or six grains in tablets. In doing litholapaxy in the aged, Dr. Chismore, of San Francisco, habitually injects two or three ounces of 3 per cent. cocaine solution into the bladder; and Dr. Swinbourne has mentioned equally satisfactory results from a similar use of cocaine in litholapaxy. I use tablets made in two sizes, one-half grain and one and one-eighth grains. The Rochester Surgical Appliance Company, of Rochester, New York, are the makers of the cystoscope, and I take pleasure in thanking them for the able assistance they have given me in its development, as well as for their accurate workmanship.—*By kind permission of the Annals of Surgery, January,* 1903.

HYPNOTICS, ANALGESICS AND RESULTANT DRUG ADDICTIONS.*

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INSOMNIA and pain are the banes of existence of the patient with any nervous affection, and from his standpoint are in themselves the maladies from which he is suffering. He prays his physician for relief from one or both, knowing, alas too well, that the market is full of drugs that will bring him relief. It does not often occur to him that the physician has any more complicated mental process to go through than merely to choose the right drug to bring healthful sleep and to banish pain. Insomnia and pain may each be the cause of the other, or they may be the outward symptoms of an exceedingly complex condition of derangement.

CLASSIFICATION OF INSOMNIA.

In trying to study the causes of sleeplessness I have found it helpful to remember the classification of insomnia that Sir James Sawyer lays down in his "Contributions to Practical Medicine." He says:

"Cases of insomnia seem to divide themselves naturally into two groups, namely, of cases of what may be called *symptomatic insomnia,* and of cases of what may be called *intrinsic insomnia.* Symptomatic insomnia attends a vast variety of morbid states, and is secondary to them, or is part of them. Intrinsic insomnia, or insomnia *per se,* is a kind of wakefulness that seems to depend on the inability of the brain to adapt itself to the conditions of sleep.

"*Symptomatic insomnia,* or the sleeplessness that is one of the symptoms of a disease attended by severe pain is not so difficult to treat, provided the pain, or the elevation of the temperature, or the coughing be the only cause. We may control it either by using hypnotics or soporifics, or by giving drugs that will reduce the fever or diminish pain, or stop the cough; or we may combine the treatments, and use soporifics in conjunction with the remedies that will remove the causes of pain or fever."

The family physician who uses sulphonal or trional for the purpose of inducing sleep in severe illness, employs one of the most valuable aids to recovery, for sleep as a natural remedy in disease is as necessary as any therapeutic remedy. But, at the same time,

*Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. A. W. Baer, A. B. Lyons and W. J. Robinson.

these drugs, if used continually, will of themselves cause the worst kind of insomnia, that in which natural sleep is absolutely impossible without the aid of drug.

Intrinsic insomnia, to refer again to the classification of Sir James Sawyer, is due to various causes, which he divides into three groups, viz., the *psychic,* the *toxic* and the *senile.*

Psychic Insomnia.—It is taught that the brain in natural sleep is relatively anemic. When the brain is in full working activity the cerebral arteries are well filled with blood from which the brain cells are rapidly receiving nourishment and ridding themselves of waste. During sleep the blood flows more gently and in smaller streams through the brain; and the brain cells are not expending energy, but are storing it up. Anything, therefore, which tends to keep up the activity of the brain cells and keeps the blood circulating freely through the brain tends emphatically to keep the brain cells from repose and the patient finds himself sleepless. The psychic causes of such brain activity may be the habit of thinking over business or work after going to bed, worry, anxiety, excessive mental work that will not let the brain cells cease working for several hours after the real work stops, sudden grief or shock, or form of preying sorrow, remorse or loss of hope.

Toxic Insomnia.—The toxic causes of brain activity are due to some poison, that maintains the arterial supply of the cortex of the brain at such a height and so long that wakefulness is inevitable. These poisons may be in the form of drugs that have become a habit; alcohol, or the milder stimulants of tobacco, tea or coffee, or, on the other hand, the poisons may be certain accumulated waste products of the patient's own metabolism.

Senile Insomnia.—Senile causes of sleeplessness are due to the age of the arteries. As the smaller cerebral arteries lose their elasticity their walls grow weak, and they are physically unable to regulate the flow of blood to the brain, which ought to be diminished at night to cause the sleep of youth.

On this brief classification of the causes of insomnia I would establish an outline of the kinds of treatment that are recommended by men of wide experience, with a discussion of the question of how far hypnotics may be used to relieve insomnia and analgesics employed to alleviate pain without danger of resultant drug addiction.

The Decline of Stoicism.

In the first place, I would say that the demand for relief from minor pains and slight insomnia has increased with the supply of remedies. Although my experience is limited to some ten or twelve years of practice, and I can not with authority compare the older days with the present, yet I think I may safely say that

people, as a rule, do not bear pain as bravely as they did before the days of anesthetics, analgesics and hypnotics. Such scenes of fortitude as Ailie's operation in Dr. John Brown's story of "Rab and His Friends," are, we are thankful to say, unnecessary now; but at the same time the day is past when women bore the pain of cancer, or the knowledge that they were dying of a tumor, to their graves without opening their lips to anyone save their physician. The brave serenity of spirit showed by Sydney Lanier, who was carried to his class room to give his lectures, and who never permitted his illness to be mentioned, and the gay stoicism of Robert Louis Stevenson, whose only reference to his hemorrhages were as to his friend "Bloody Jack, who was with him that morning," are examples of that heroism in suffering which I believe has become much more rare with the introduction of the many pain-relieving remedies.

Any sufferer may to-day, at the cost of ten cents, purchase temporary relief from a headache that is due to overwork, or an artificial night's sleep where sleep should have come naturally. To suffer is no longer deemed brave, it is deemed ignorant; but the little knowledge that will bring relief is too often a dangerous thing.

The result of this easy and sure means of obtaining relief has led patients, and sometimes physicians, to be too easily satisfied with relieving pain and giving artificial sleep instead of ferreting out the cause of the trouble and removing it, as they were obliged to do in the old days if they would stop pain.

I do not purpose to speak of drug habits acquired by patients who treat themselves, except to say that every analgesic and every hypnotic is dangerous if used indiscriminately; and that all patients should be emphatically warned that there is nothing that they can take regularly and persistently to relieve pain or sleeplessness without doing themselves permanent injury. Paradoxical as it may seem, the least harmful drugs are often the most deadly. Fewer men and women ruin their nerves by the abuse of chloral than they do by the use of bromides. I have had many patients the victims of the bromo-seltzer habit, who took high moral grounds against the use of morphine and chloral. I have entered a business man's office and seen it stocked with a winter's supply of bromo-seltzer, with which he proposes, as was his wont, to ward off his regular afternoon headache; and I have had as hard a fight to bring him, by means of travel, exercise and diet, to a normal state of health as in breaking a morphine fiend of his habit.

It would greatly lessen the dangers of drug habits if family practitioners would encourage patients to endure a certain amount of the pain and sleeplessness of general diseases, never saying, "I

will leave you something perfectly harmless that will make you sleep"; or, "I will give you something very new and very powerful that will stop that pain in ten minutes." The drugs for relief should, as far as possible, be combined in prescription with the drugs that treat the disease, or left without name or emphasis to be taken at the right time. In almost every case the abuse of phenacetin, antipyrin, acetanilid, the salicylates and allied products has begun by a physician calling especial attention to the efficacy and harmlessness of these drugs first prescribed to ease the pain and sleeplessness of some acute disease, such as tonsillitis or grippe.

The Use of Fake Synthetic Formulae.

In this connection I cannot refrain from calling attention to a large number of combinations of well-known drugs of this class that are given fake chemical formulæ, and which, while substantially mixtures of such remedies as antipyrin, acetanilid, phenacetin and allied synthetics, yet nevertheless are claimed to be new and important synthetic discoveries. It is to be regretted, moreover, that there are to be found physicians who will describe at great length and in much detail the wonderful cures which have resulted from the use of some of these impossible synthetics. All honor should be paid and support given to the enterprising chemist who has devised a really good new product. The profit that he may make from it is legitimately his, but physicians, as a class, I believe, are too prone to accept unchallenged the statements of some manufacturers who put out misfit combinations.

It is not expected that we as physicians should bear always in mind the chemical lore of our laboratory days, but a more careful scrutiny of the great flood of newer synthetics is advisable if not imperative. Moreover, when it is to be borne in mind that many of these so-called newer synthetics are sold for from fifty cents to one dollar an ounce, when their constituent parts may be purchased for from ten to twenty cents per pound, the robbery is made possible only under the guise of a trade name, and if the education of the physician is not sufficient to protect the public, then legislation is imperative.

How to Treat Insomnia.

As a rule the few doses of such drugs that are necessary to bring relief in acute diseases, whether to ease pain or to bring sleep, lead to no habit. As soon as the body has recovered its tone, and so soon as the cause of the pain is removed and the pain itself has disappeared, the body does not crave a repetition of the drugs. Even opium, in any of its forms, can be borne well and leaves no bad effect when intelligently prescribed. The sole danger in such

cases, I believe, lies in the fact that the patient knows what has given him relief, and will, inevitably, tamper with the fascinating drugs when he has some minor ailment in the future. He then almost invariably runs a twofold danger: by continually giving himself relief from a pain that ought to be investigated he ignores the cause of his pain until his disease is pronounced, and in the meantime has by repeated use of the drug habituated his nervous system to overstimulation.

These cases in which pain and insomnia were at first merely secondary phenomena form a large percentage of the patients who afterwards come to us to be treated for the toxic form of insomnia *per se.*

In the severer grades of psychic insomnia it is often necessary to secure a few nights of artificial sleep at any cost; for the sleep of itself will in a few days induce sleep and the doses may be tapered off, or the need for them will stop naturally. In the cases of insomnia following sudden shock, great mental excitement, the anxiety attendant on strain or business, or the nervous state of worry in women that is accompanied by a hysterical breakdown, it is wise to give hynotics and to induce sleep until the body is thoroughly refreshed. In such cases many physicians prefer, I think, with good reason, opium or chloral, or their combination, although of late years the use of trional and sulphonal with some of the modifications of chloral, chloralamid, etc., have given excellent results.

Sir Lauder Brunton has suggested with much wisdom that a combination of hypnotics is more successful than any one of them singly. He recommended the now well-known mixture of small quantities of morphine, chloral and the bromides, and this is a favorite combination of a great many of us.

Popular Knowledge of Opium Undesirable.

Whonever opium enters into the prescription for the relief of insomnia or pain, too much caution can not be urged. This is an oft-repeated tale, and yet from the crop of habitues of this drug that I see yearly, it seems not altogether to have been learned. At the same time, it is my own firm conviction that there is too much popular knowledge of the effects of opium, and personally I should condemn in the strongest possible manner the practice of the Woman's Christian Temperance Union of imposing on the public the 10 to 25 per cent. of information regarding alcohol and opium which they make obligatory in the publication of school books. The giving to the young and immature a knowledge of the seductive activities of any agent is, in my humble opinion, a practice worthy of the severest criticism.

The Newer Opium Derivatives.

But this leads away from the last topic of my paper, the new opium derivatives. These, heroin, dionin, and peronin, as is well known, are derivatives of morphine; modifications by chemical substitution of groups of atoms. They are distinctly not morphine, and their activities have definite and distinct individualities. The pharmacologist who would alone register blood pressure, respiratory activity and heart beat, may maintain that these drugs have an identical action; but he does so on very meagre and insufficient data. The psychologic manifestations of the activities of these drugs are distinct and in the genesis of drug habits, the brain and its activities is the all-important factor, heart beat and blood pressure are secondary.

Of the opium habit I need say nothing; physicians are acquainted with its general features, but in this day and generation what may happen on account of this widening out of our therapeutic possibilities?

I believe that just as phenacetin, antipyrin and acetanilid, trional and the newer chloral combinations have so richly supplied the profession with weapons to attack pain and insomnia and have thereby lessened the danger of the opium habit, so the introduction of the new morphine derivatives will afford a like refuge for those patients for whom opium seems imperative. They will lessen the great amount of the morphine habit even if at times they may induce a habit of their own. That they do is no question, but I have dealt with this subject elsewhere.

To my mind the question of drug habits, so far as the physician is concerned, in large part resolves itself into a number of simple restrictions that we shall place on ourselves. These may be expressed as follows:

Conclusions.

1. Prescribe the drug which will do the work required to produce sleep or relieve pain, but let it be so graduated with reference to dosage and choice of remedy that it will be the least harmful if used steadily.

2. Keep our mouths tightly shut as to what we are using. Do not say, "Take 1 gr. phenacetin, 10 grs. of salol, ½ gr. of codein." Give it to the patient if necessary, but do not under any circumstances permit him to know what it is. That is a medical question, and if the information is imparted its circle of pernicious activity radiates further than we can imagine.

3. Wage incessant warfare on the many pirates who provide all sorts of reliefs to the public, going directly to them through the lay press and the magazines.

4. In conclusion, let it be remembered that the introduction of newer drugs, rightly set forth by honest chemists and worthy clinicians makes most desirable accessions to our armamentarium; but that false pretense and economic robbery of an unsuspecting public deserve united condemnation and opposition.

DISCUSSION ON THE PAPERS OF DRS. SPRATLING AND JELLIFFE.

DR. FRANK WOODBURY, Philadelphia.—The author referred to the laws of China, but not to those of Japan, which present a marked contrast. The Japanese government apparently modelled its regulations of the sale of nostrums on the plan of Austria. It requires the registration of actual formulæ, and if any are found which do not correspond to the formula their sale is forbidden under penalty. Furthermore, if any compound or preparation is considered by the health board as injurious or dangerous, its sale is absolutely prohibited. Finally, those that are shown to be useful have their price regulated, so that the sick shall not be charged extortionate prices. These laws are not only in marked contrast to the absence of regulation in China, but they are also far in advance of our own.

DR. H. C. WOOD, JR., Philadelphia.—Most of the members of the American Medical Association have decided views on the subject of self-medication and on the dispensing of medicine by the physician who thus invades the province of the pharmacist. I think that this practice is attended by great danger to both professions, and to the patients as well.

With regard to the suggestion of Dr. Spratling about instructing the laity, I think that it would be better to remove the beams from our own eyes before attempting to remove the mote from our brother's eye. For instance, many of the preparations now in use among physicians are nothing more than secret preparations. Only this afternoon, in coming into the room, I picked up a circular containing the advertisement of a preparation made by Rigaud and Chapoteaut, which is not only advertised to the profession, but is also advertised to the public in the daily papers for self-medication. The remedy for this evil is difficult to find. Dr. Spratling has suggested popular lectures as a means of instructing the public; perhaps some papers read before medical societies might afford a good introduction to the general discussion of the subject.

The final recommendation is not possible in the United States. The sentiment of the people would be against it as being antagonistic to American ideas. Much, however, can be done by the proper exercise of legislative control. The greater part of the protection to nostrums is due to copyright laws. Probably the protection by copyright is more than is needed. If the profession would try

to overcome the copyright protection of nostrums, it would accomplish a great deal toward breaking up this kind of self-medication by the laity.

Dr. W. J. Robinson, New York City.—The papers are both valuable and timely. The suggestion that physicians should contribute articles to be published in the daily papers is a good one; but to pay for their publication would cost too much. If the articles were well written, no doubt the papers would be glad to get them as matters of interest to their readers.

I am surprised to hear Dr. Spratling's remarks on the careful regulation of the sale of patent medicines in France. I have been in France myself, and that is not the opinion that I would have formed from my own observation. There is hardly an old wall in Paris that is not covered with advertisements of proprietary articles, and the little kiosks, or public urinals, are covered with directions for self-treatment for venereal disease and lost sexual power, the remedies to be bought at all pharmacists. Possibly the laws are on the books but are not enforced. Patent medicines are everywhere in evidence in Paris, even the illuminated kiosks at night are covered with announcements of new nostrums.

With regard to the remark about patients bearing pain much less than formerly, I believe this to be true. We can not go into the lying-in chamber without taking with us a bottle of chloroform or ether, and we use them for slight surgical operations, often, indeed, against our better judgment.

A remark has been made about physicians of the present day giving simple substances, instead of the complex preparations that were formerly in use. This is in the direction of more accurate and scientific prescribing. This has been recognized by the Pharmacopeia, and the physician now has at his command many articles in the form of active principles and simple substances that it was impossible to get formerly, except in combination. This is a fact known to every chemist; but the average physician is slow to understand it.

About the evils of self-drugging, everyone present can recall instances. I recall a patient who took, every day, sixty grains of phenacetin, and who claims that when he goes without it he suffers with headache. It is impossible to say whether the headache is really caused by the want of the phenacetin or whether a phenacetin habit has become established. Another patient who had a syphilitic headache when a young man, and was cured of it by the biniodid of mercury, for years afterward was in the habit of recommending this drug to his friends when they complained of having headache.

Dr. W. L. Dickerson, St. Louis.—I have observed that, just

at the close of the sessions for the last four or five years, there has been brought up for discussion this most interesting subject when there are very few to discuss it and very little time to do it in. It seems to me that, in trying to regulate this matter of the use of proprietary preparations, we must begin with the profession itself. The pharmacists of my neighborhood can always tell when an agent for a drug manufacturing house is going around visiting physicians, because on the next day there will be several prescriptions calling for these special articles to be put up. Physicians know absolutely nothing of the composition of many of these preparations, and yet they take the statements of the agents, or the advertisements, as their authority. Certainly if a man makes a really valuable discovery or contribution to medical science, he should receive the advantages derived from the sale, but in that event he should patent the drug, and then we would know what it is that we use, for the composition must be made known of articles that are patented.

With regard to the habit of self-medication with narcotics, I think that there is a danger of such habits being formed if the physician places prescriptions of this kind in the hands of his patients indiscriminately. I am in the habit, when prescribing for a patient suffering with pain, to give a tablet of morphine from my hypodermic case and give a prescription for whatever else may be required. In this way, the patient gets the prescription without the opiate and there is less danger of forming the habit by refilling the prescription.

Dr. W. P. Spratling, Sonyea, N.Y.—The tone of one of the speakers would seem to indicate that general legislation could not regulate the manufacture and sale of proprietary medicines in the United States. Such may be the case, but I think that the profession can secure some legislation if an effort is made. We can get laws to control the adulteration of food supplies, and I think the necessity for the protection of the public against injurious medicines is just as great in some instances as that of securing better food. The statements I made concerning the regulation of drugs in foreign countries was taken from consular reports made to the Department of State in 1898.

Dr. S. E. Jelliffe, New York.—The proposition seems to be a very simple one, and one that could probably be settled in five minutes if we, as a profession, were all ideal ourselves; but we are not all ideal by any means. For instance, I have known this to occur: In New York City a very enterprising manufacturer devised a scheme to increase the sale of his particular produce. He issued pads, with printed prescriptions; each one had a coupon attached; for every one of these coupons representing orders sent

to the drug store, the physician would receive 25 cents. If there are physicians of such character among us as to stoop to participate in a scheme like this, what can we say to the public or to the manufacturer of proprietaries?

COMMITTEE APPOINTED TO MAKE RECOMMENDATIONS.

DR. A. W. BAER, Chicago, moved that a committee of three members of the section be appointed on the subject of these papers, to report at the meeting of the section in 1903, making such recommendations as they think fit. The resolution was unanimously adopted and the chair appointed to serve on the committee, Drs. Baer, Robinson, and Wood.—*Journal of American Medical Association.*

THE "LANCET" SPECIAL COMMISSION ON NATURAL MINERAL WATERS.

THE following extracts from the report of *The Lancet* Special Analytical Commission on Natural Mineral Waters, in this case Hunyadi Janos water, are interesting and speak for themselves:

Natural mineral waters of the purgative saline type have been brought so prominently before the notice of the profession of late that in the interests of therapeutics and pharmacology it is desirable that an exact knowledge of the chemical composition of these waters should be known, while it is also important that those who may prescribe them should have some assurance as to their constancy of composition and purity. A carefully conducted analysis will, of course, establish the composition and therapeutic value of the water and the relation of the constituents which it contains, and may afford, in addition, some evidence on the question of its natural origin. The evidence of chemical analysis alone, and without other facts being taken into consideration, cannot be regarded as affording a decisive answer to the question—Is the water a natural one? It is quite within the bounds of possibility to so imitate the chemical composition of a natural water, even in regard to the rarer constituents, as to defy differentiating by chemical means. We are not aware that such deceit is ever practised, but it is possible. To do this, however, with anything approaching exactness would involve considerable skill and trouble, especially in regard to the smaller constituents and towards securing the correct ratio of the constituents t each other. So far, then, a chemical analysis giving not only the proportions of the chief constituents, but also of those that are considerably less in amount, would afford some clue towards discriminating between a water of natural occurrence and one that is a prepared pharma-

ceutical product. It is, therefore, of no small importance that the practitioner should be in possession of as complete an analysis as possible of the water he may recommend, and, further, any additional evidence as to the general *bona fide* character of the water and as to its purity should not be disregarded.

The Lancet has published independent analyses from time to time of several natural mineral waters with the view of enabling the profession to judge the probable therapeutic value for themselves. To put them in possession of further facts relating to the natural source of the water is obviously difficult in the absence of any practical acquaintance of its history at the fountain head and of its surroundings, as well as of the modes of collection, bottling, and dispatch. The circumstances as to how such waters occur in nature, as to the probable origin of their constituents, as to the methods of collecting the water and distributing it, are, it must be admitted, not matters of common knowledge. At any rate, it is important that a practitioner should know these details in regards to a medicinal agent which he may be constantly prescribing, and the facts concerned cannot but prove of general interest also. An opportunity has recently occurred to one of our Commissioners whilst on a visit to several of the largest cities on the continent of inspecting one of the most extensive and most widely known establishments where an unlimited supply of natural bitter purgative water of the sulphate class occurs, and the occasion is one which may be taken advantage of in presenting our readers with what we venture to think should prove an interesting account of the processes he witnessed there. The establishment referred to is that belonging to Mrs. Saxlehner and founded by her husband (the late Andreas Saxlehner) in 1863.

It is from the Saxlehner springs that "Hunyadi Janos" water is derived, the prototype of all bitter waters and especially distinguished by that name. Parenthetically it may be stated that the name "Hunyadi Janos" in no wise relates to the district; it is the name of a Hungarian celebrity, John Hunyadi, who flourished in the fifteenth century, and after whom the water was called by its discoverer. The valley in which the Saxlehner springs are situated is known as the "Orsod" valley, which is located a few miles south from Budapest on the right bank of the Danube. The property comprises some 280 acres, of which 120 are employed for obtaining Hunyadi Janos water, and entirely occupies the valley, which is bounded by a series of picturesque hills which may be regarded as remote branches of more rugged mountains beyond. The wells are covered in by a wooden structure which is proof against weather, and they number over one hundred. The surface of the ground is practically level, is covered with luxuriant grasses, and is very soft to walk upon. The wells

are shallow and in the majority of cases not more than eight metres deep, the surface of the water when the well is full being within two metres of the ground surface. Special precautions are therefore taken to prevent contaminations with surface drainage, and to this end the well is lined with strong cement about two metres deep. At the bottom is impenetrable clay. Not only are strict precautions taken against the ingress of surface water, rain, and so on, but on no account is human refuse or dejecta of any kind allowed to be disposed of on any single portion of the property. Human excreta is carried away and disposed of in Budapest in an approved way, and even the dejecta of horses is carefully excluded from the vicinity of the wells. These precautions are admirable, and the same spirit of carrying out what in the interests of sanitation and of the purity of the water is imperatively demanded obtains also in every other matter.

The well-house is closed by flaps provided underneath with aluminum sheeting. There is a small square opening in the left flap which is used for the shaft of the pump and is of small size to exclude as far as possible dust and other objectionable matters. At the back of the well is a pipe running vertically, which serves to ventilate the air space in the well. The apparatus seen in the illustration to be resting on the closed flaps was part of that employed by our Commissioner in making certain tests on the spot. Thus to the left is a hydrometer case, and to the right of this again two cylinders, one containing the water with a hydrometer floating in it and the other a thermometer; to the right of these again is a bottle conveniently attached to a cord for the purpose of obtaining a sample. In the far right-hand corner will be observed a small well with circular opening and flap, which in the illustration is open. This consists of a small chamber quite separate from the well itself just described, which communicates by means of earthenware pipes with a reservoir situated just outside the filling house some 100 feet away. The level of the reservoir is somewhat lower than that of the well cistern, so that when water is discharged into the cistern it finds its way along the pipes to the reservoir. In other words, this cistern at the well acts like a large funnel for the purpose of conveying the water away to the reservoir previously to its arrival in the filling house. This is done by attaching a pump to the big well when the well is full and pumping the water into the small cistern referred to. Thence the water flows by gravitation into the large reservoir. The pump sucking up the water from the well and discharging it into the cistern through a pipe to the right will now be readily recognized.

The contents of each well are thus discharged into a large reservoir into which the waters from various wells flow and where they attain a uniform degree of density or specific gravity,

and, therefore, of composition in regard to saline constituents. In no stage in the collecting process is there any interference with the natural character of the water—nothing is added and nothing is abstracted. Moreover, the water of one well that may be slightly weak is compensated by mixing with the water of another that is slightly strong, so that what is bottled is absolutely constant in composition. This will be found to coincide with the analysis made by Liebig and corresponding with a density of 1036 at 60 degrees F. The temperature of the water in the wells averaged 51 degrees F. The analysis given by Liebig of the waters bottled at this density is as follows:

Sulphate of magnesia	16.01	parts	per	1000.
Sulphate of soda	15.91	"	"	"
Sulphate of potash	0.08	"	"	"
Chloride of sodium	1.30	"	"	"
Carbonate of soda	0.79	"	"	"
Carbonate of lime	0.93	"	"	"
Carbolic acid, free and in solution	0.52	"	"	"

The water of constant degree of density is next elevated into a large wooden vat situated in the filling house. This vat is thoroughly cleansed by means of steam twice weekly. Thence the water isallowed to flow, according to the number of bottles being filled, into the ingenious filling apparatus situated almost exactly below the vat. Corking, capsuling, and labeling complete the process. The capsuling process is particularly ingenious, as is also the filling apparatus, which was specially designed for the water is allowed to flow, according to the number of bottles twenty-four hours. It should be added here that all the wells yielding the Hunyadi Janos water come under the control of the head office of the first district of Budapest, which is subject to the authority of the Ministry of the Interior, who have the entire administration of affairs in Hungary over the whole of the mineral waters, springs, and health resorts in the country. Further, as regards filling and corking and their management, these establishments and wells are submitted from time to time to local inspection, executed by the officials of the district head office, whose competency is established by the existing laws and orders; and, again, bottles filled in presence of the officials and sealed before them for the purpose of authoritative supervision and control are, if considered necessary, officially analyzed.

On examining the label of one of the samples so obtained the following Hungarian statement translated into English occurs: "The natural Bitterwater contained in this bottle was yielded from the Hunyadi Janos Springs, property of Andreas Saxlehner, in the presence of the Chief of the District, mentioned below, and the bottle was officially sealed. Budapest, 19th December, 1884.

Office of District No. 1.—Signed by the Secretary and Chief of the Municipality District."

The establishment is open to the inspection of visitors, and especially medical men, on presenting their card at the Saxlehner Offices, No. 3 Andrassy Street, Budapest, and the Saxlehner Spring, whence the Hunyadi Janos water is derived, is counted one of the sights worth seeing in and around the interesting and enterprising city of Budapest.

The most satisfactory way of establishing the honesty of a natural water is undoubtedly to secure specimens on the spot and to make independent analysis of them and to compare the results with samples obtained in the ordinary way on the market. If the results coincide there can remain no doubt that the water offered for sale is precisely the same as that drawn from the fountain head. Our Commissioner having obtained the permission of the proprietors, which was freely given, to select samples wherever and whenever he chose and from any single well out of the hundred on the property, or of specimens in the filling apparatus, proceeded to do so, the samples being subsequently sealed and sent to *The Lancet* Laboratory for complete analysis. At the same time some dozen samples of the water were purchased in various and widely separated parts of London for analysis also, with the view of contrasting the results.

In order to make the search for rare constituents as thorough as possible no less than 25 litres of the water direct from the filling apparatus, and showing a density of 1036, was evaporated carefully down to dryness in a shallow copper vessel. This operation was conducted at the spring, and a clear crystalline residue was obtained, which was found to weigh nearly 1000 grammes (more correctly, 917.81 grammes), or 2lb. 0⅜ oz. This amounts to 36.71 parts of salts in 1000 parts of the water, an amount which almost exactly coincides with that obtained by Liebig. Considering that probably Liebig operated on a comparatively small volume of the water, and that in the experiment just described no less than 25 litres, or 44 pints, or 5½ gallons, were employed, the results are remarkably close and testify to the uniformity of composition of Hunyadi Janos water.

In Honor of Dr. Osler.—The ex-resident physicians and associate physicians of Johns Hopkins Hospital gave a dinner, May 15th, at the Maryland Club, Baltimore, in honor of Dr. William Osler, at which Dr. Osler was presented with the Dictionary of Natural Biography in sixty-five volumes, a work which he had long desired.

The Canadian Journal of Medicine and Surgery

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Advertisements, to insure insertion in the issue of any month, should be sent not later than the tenth of the preceding month. Agents for Germany, Saarbach's News Exchange, Mainz, Germany.

VOL. XIV. TORONTO, AUGUST, 1903. NO. 2.

Editorials.

CANCER STATISTICS AND SOME SPECULATIONS ABOUT THE CAUSE OF CANCER.

FROM statistics published in the report of the State Board of Health of New Jersey for 1902, it is evident that the cancer mortality of that State is attracting the attention of sanitarians. The writer says: "In New Jersey, the deaths from this disease during the past twenty-three years have exceeded in number those caused by typhoid fever, and they also have exceeded the combined num-

ber of deaths from scarlet fever, measles and smallpox." He also mentions that at present there is a prevailing belief to the effect that the increase in the number of reported cases of cancer is due to the increase of longevity. This last observation agrees with one made by the Registrar-General of Ontario in his annual reports for 1900 and 1901, in which an opinion was expressed that cancer is a disease of old age, and that the cancer mortality registered in Ontario is due to the great number of deaths among aged people. He further states that there were 1,094 deaths from cancer in Ontario, in 1901. Calculated on the basis of the total mortality of the Province from all causes for the year, viz., 29,608, there would be a cancer mortality in Ontario of 3.69 per cent.; or the population for that year being 2,184,144, the cancer mortality per 100,000 living persons would be 50.08. Through the courtesy of Mr. A. Blue, Commissioner of the Fourth Census of Canada, 1901, we are enabled to present the subjoined cancer statistics for a portion of the Dominion only, as the revision for Ontario and Quebec will not be completed till September next. The Bertillon system of enumeration has been used:

Provinces.	Population, 1901.	Total deaths from cancer and other malignant tumors, 1901.	Deaths from all causes, 1901.
British Columbia	178,657	54	1,748
Manitoba	255,211	72	3,117
New Brunswick	331,120	139	3,820
Nova Scotia	459,574	237	5,337
Prince Edward Island	103,259	44	1,187
N. W. Territories	158,940	25	1,891
	1,486,761	571= 38.40 per 100,000 living persons.	17,100= 11.50 per 1,000 living persons.

These Canadian cancer statistics may be compared with the following mortality rates for cancer, per 100,000 living at all ages: German Empire (1899), 72.7; England and Wales (1900), 82.8; Scotland (1899), 81; Ireland (1901), 65; United States (1900), 38.6.

Statistics of world-wide interest in connection with cancer have been compiled by Dr. A. Wolff, of London, England, and have appeared in successive numbers of the *British Medical Journal* (April 18th to May 16th, inclusive). The conclusions of a positive character, which appear to result from this extensive inquiry, are:

(1) That certain races are especially prone to cancer, more particularly the Scandinavian and the different branches of the Germanic family.

(2) That cancer is more prevalent in districts in which beer is the staple drink, and the excess is in some degree proportionate to the amount consumed per head.

(3) That cancer tends to cause excessive mortality in regions abounding in water, but to a much more marked extent when these are covered with woods or forests. The mortality is also usually high along the valleys of rivers flowing from such districts.

(4) That the regional distribution of cancer indicates the probability that the disease is due to a specific cause.

The conditions specified by Dr. Wolff open up definite fields for further inquiry, particularly as to the influence of race or beer in the genesis of cancer. Is there a hereditary tendency in the Scandinavian and German towards cancer? Is the inordinate consumption of beer the sole cause, or are both causes, heredity and beer, co-operative in producing the large cancer mortality observed in these races?

As indicative of a tendency on the part of certain observers to trace cancer to a dietetic cause, it may be mentioned that Captain E. R. Rost, I.M.S., Rangoon, attributes the rise in cancer mortality to an increased consumption of sugar in the form of sweetmeats and other delicacies of modern confectionery, and a corresponding diminution in the use of salt-preserved articles of diet. (*The Indian Lancet,* May 18th, 1903, p. 849.)

The influence of the forest-clad slopes of river valleys in increasing mortality from cancer seems as remote as race or diet, yet an apparent remoteness in this factor should not prevent scientists from looking to the soil as a possible source of cancer. Perhaps some parasite, as yet undiscovered, may be found to exist in well-wooded river valleys, and may prove to be the efficient cause of cancer. Some bacteriologist may yet do for cancer what Nicolaier has done for tetanus.

In the meantime research for the cause of cancer goes on in many laboratories. It will not suffice to ascribe the cancer mortality of a country to the degenerative effects of old age, for no age is exempt from the ravages of malignant disease.

Cancer of the cervix uteri has been frequently observed in women under thirty years of age, and sometimes so extensive as

to contraindicate operative interference. (*American Medicine,* June 20th, 1903, p. 1012.)

As it is extremely rare for a multiparous woman to suffer from cervical cancer unless she has been subjected to some operation or instrumental treatment, the prevention of cervical cancer would seem to depend on the early restoration of a lacerated cervix, whether it produces symptoms or not.

In *Progressive Medicine,* June, 1903, p. 140, John G. Clark quotes Israel, who says in relation to the etiology of the cancer cell from repeated irritations: "For example, a destruction of some of the epithelial cells upon a surface produces an increased activity of those remaining in order to replace the deficit. Through repeated insults, which result each time in proliferation of the epithelium, a condition is finally reached, in which, from the more or less prominent irritation, the cells take on an abnormal activity of growth. In this light carcinomata cannot be looked upon as infectious growths. They are rather the result of repeated epithelial insults, produced by chemical and mechanical means, and, perhaps, indeed, the irritative action of micro-organisms." Viewed from this point, the prevention of cancer, irrespective of race or habitat, would seem to depend on the removal of irritation (chemical, mechanical and bacterial), together with the *restitutio ad integrum* of an injured tissue or organ, wherever the lesion may be found, and as soon as it is possible to recognize it. J. J. C.

AN OVERCROWDED PROFESSION.

NOTES of warning keep pouring in from the great European countries, indicating that the medical profession is overcrowded. Lately a young physician was caught in the act of stealing goods from a novelty store in Paris. When brought before the police magistrate the culprit pleaded that he was literally starving, and had committed theft to provide himself with the wherewithal to buy food. On this text *Le Temps* reads a lesson to the numberless young men who frequent the educational institutions of France—telling them that the overcrowding in the professions cannot be better illustrated than by the example of this unfortunate physician.

The saturation point in the liberal professions has been reached in France long ago. That country has too many lawyers, too many doctors, too many professors, and she does not know what to do with those turned out by the universities every year.

To quote the *ipsissima verba* of *Le Temps*: "France wants merchants, manufacturers, farmers and colonists, but does not want doctors. She has more doctors than she wants. To struggle against these facts is sure to lead to shipwreck."

This is a rather dark prognostic for the medical students of France. Yet when looked at from the standpoint of Ontario medical statistics the proportion of doctors to population in France does not seem great. In Ontario there are 11.4 doctors per 10,000, and at Toronto there are 20.06 per 10,000. In Paris there are 2,892 doctors for a population of 2,714,068, or 10.65 per 10,000.

French cities ranging from 492,000 to 100,000 population, the combined populations of which amount to 2,636,032, have 1,857 doctors, or 7.4 per 10,000. Cities ranging from 100,000 to 30,000, with combined populations equal to that of Paris, have 1,487 doctors, or 5.47 per 10,000. In the rural districts of France doctors are few and far between, numbering scarcely 3 per 10,000. It may well be, therefore, that if the ambitious French graduate had been willing to put up with a poor practice among the peasants, he would not have been forced to resort to larceny in order to keep body and soul together in the gay capital. Be that as it may, the lesson read by *Le Temps* is true, and no young man should think of devoting himself to a medical career in France unless he has private means, or can earn a living at something else, to eke out the small gains of his practice.

In England the prospect is no better. During the last twenty years the public health in that country has greatly improved, owing to causes quite unconnected with the number of physicians. The annual death rate of England per 1,000, in 1871, was 22.6; in 1880, it was 20.5; in 1890, it was 19.5; in 1900, it was 18.2. And yet the proportion of doctors to the medical work required is increasing instead of diminishing. Thus in 1871, there were 29 doctors to 1,000 deaths; in 1880, there were 29; in 1890, there were 35; in 1900, there were 41. In other words, taking total annual deaths as roughly proportional to total annual medical work, if the average annual income of a doctor in England was

$2,050 in 1880, in 1900 it would have fallen to $1,450. Dr. Gordon, who publishes these statistics in the *British Medical Journal,* May 16th, 1903, p. 1152, goes on to show that the mortality among English physicians is higher than among the members of the other professions. The death rate from nervous diseases among them is excessive and increasing, although alcoholism is insufficient to account for this, and is decreasing. *The death rate from suicide is enormous and is notably increasing.* In the 1890-92 period suicide among medical men in England was to suicide among occupied males generally as 41 to 14. To remedy the congested state of the profession the British Medical Association suggests: (1) That it is undesirable that any one should be registered as a medical student, unless he or she has attained the age of 17; (2) that the standard of the examination in preliminary general education required by the General Medical Council should be suitable for candidates of 17 years of age, and not lower than that required at present for the Oxford or Cambridge senior local examinations; (3) that the examination should include a pass and an honours division, as in the university local examinations, the subjects for the pass to comprise at least Latin, mathematics (comprising arithmetic, algebra and geometry), English grammar, literature and essay writing, history, geography, and either French or German; the honours division to include Greek and physical science, as compulsory subjects; (4) that the present system of multiple examining boards is most undesirable, and that it is essential, in order to secure uniformity of standard, that the medical Acts should be amended, so that the General Medical Council should be empowered to appoint a single examining board, which should hold its examinations as often as necessary at multiple centres, simultaneously.

These suggestions are valuable, and if regulations founded on them were enforced, the number of medical students in England would be reduced, but, even so, a slight reduction would not accomplish what is required. If the real object aimed at is to so lessen the number of medical students in England, that there will be a decent living for medical men in that country, the simplest plan would be to require that every candidate applying for a license to practise shall have a B.A. degree from some approved university. There would then be no doubt as to the educational qualifications of medical students, and

fewer candidates would be induced to enter a profession, which at the present time, does not wear a very inviting aspect to a highly educated man. J. J. C.

THE RETIREMENT OF DEAN GEIKIE.

A CONTEMPORARY, in writing of university appointments, awhile ago, said: "College professors seldom die and never resign." So evenly has the tide of affairs in the universities of Toronto ebbed and flowed, that when even a venerable teacher sees fit to withdraw from what has been an average life-time of earnest, splendid service to his college, and a never-dying example of sturdy manhood and keen unswerving application of good sense and high mental attainments, all dedicated to his office of Dean of Trinity Medical College, it causes more than a ripple of regret, while at the same time it leaves an opportunity for his mantle to fall upon the shoulders of another. Dr. Geikie was founder, and for twenty years Dean of Trinity College Medical Faculty. Earlier in life he was a professor in the old Rolph Medical School; so for over forty years he has been a medical teacher in Toronto, and knows his work from its alpha to its omega. Father-like, he loves his child, Trinity Medical College, and now, with the current of the times, and the tendency to amalgamation in all circles, business, educational, and even religious, the child of his heart and care through all these thirty years has reached out and formed an amalgamation with Toronto University, and so, with enlarged resources and better equipments, and a strong teaching body, elected from both institutions, presses on keeping pace with this rapidly advancing age of high and ever higher achievements. We feel sure we are voicing the feelings of every Canadian medical practitioner when we say we are heartily sorry that splendid old Dean Geikie feels, owing to this amalgamation, that he must withdraw from further active work. He has our admiration and respect; he will be missed, for in educational affairs, as well as in business pursuits, we need the men of experience, who can look back as well as forward, and who can close one eye in retrospection, applying the old-fashioned test of ripe judgment to ascertain, when occasion requires, if the proposed action answers to the plumb-line. W. A. Y.

EDITORIAL NOTES.

Cremation in Europe and the United States.—From the report of the Association for the Propagation of Cremation, which held its twenty-second general annual meeting June 6th, 1903, at Paris, under the presidency of Dr. Bourneville, we learn that there are at present eighty-four crematories in operation in Europe and America. Of these twenty-eight are situated in the following Italian cities: Milan, Lodi, Rome, Cremona, Brescia, Padua, Udine, Varesa, Spezzia, Novara, Florence, Livorno, Asti, Pia, Alexandria, Como, Turin, Mantua, San Remo, Verona, Bologna, Modena, Venice, Spoleto, Perugia, Sienna, Bra and Ferrara. It is interesting to note that at Milan the Catholic clergy, more accommodating than the French clergy, consent to accompany the body of a deceased person to the cemetery where cremation is performed. The twenty-six crematories of the United States are situated in large cities, such as New York, Chicago, St. Louis, Buffalo, Cincinnati, etc. Five new ones have been opened this year. In England there are nine crematories. The most noted and the oldest of these is the Woking crematory, in which 275 bodies have been cremated. A new one was opened November 22nd, 1802, in London. It is expected that this building will help to popularize the practice of cremation in London, the Woking crematory being inconvenient, as it is situated about thirty miles from the metropolis. Cremation is forbidden in Prussia, Saxony, Bavaria, and Wurttemberg. In Berlin, however, there is a columbarian in which the ashes of cremated persons are laid. The number of cremations in the German Empire is increasing. In Switzerland there are crematories at Zurich, Bale, Geneva, and Saint Gall. At Copenhagen, Denmark, the number of crematories keeps constantly increasing. There is a handsomely-equipped crematory at Montreal, Canada. In Holland, Austro-Hungary and Russia cremation is forbidden.

Vaginal Hysterectomy for Acute Puerperal Infection.—Dr. Deletrez, of Brussels, reports to the Belgian Surgical Society a case in which vaginal hysterectomy was done to save the life of a patient, who, after miscarriage at the fourth month, had acute

puerperal infection from retained placenta. The patient's illness began on the evening of March 20th, 1903, and she was brought to the hospital on the following day. Immediately after her arrival the os uteri was dilated, and a large portion of the placenta removed. Lavage and intra-uterine tamponment were also employed. On the six ensuing days the blunt uterine curette was employed. The placental fragments were odorless at first, but became fouler from day to day, and on March 26th exhaled a gangrenous smell. A microscopic examination of the uterine secretions having revealed the presence of streptococci, 100 c.c. of antistreptococcic serum were injected March 26th, and a similar quantity March 27th. At four p.m. March 27th, the patient had a severe chill, followed by fainting, her temperature went up to 106 5-10, and her pulse to 130-140; delirium supervened, and her face assumed a pinched expression. As a last resource vaginal hysterectomy was done at five p.m. The operation, which was easily performed, being completed in less than ten minutes, was immediately followed by a subcutaneous injection of 2,500 grams of the physiological salt solution. At ten p.m. the same evening the temperature fell to 98 3-5, and her pulse to 120. On the 28th the temperature rose to 102 1-5, and on the 29th fell to 100 2-5. On March 30th, the third day after the operation, it became normal. The patient did well, and was able to leave the hospital April 9th. The uterus measured about 12 centimeters (4¾ in.), and presented at its left horn an infundibulum, in which there was a pretty large fragment of placenta in a gangrenous condition, so closely adherent to the uterine mucosa that it could not be separated from it without tearing the uterine tissue. The remainder of the uterine mucosa was quite smooth and presented no lesion.

In Favor of a Necropsy.—In a case of sudden death from accident or violence, even when an individual has been killed instantly, a physician called to examine the dead body may not be able to find a lesion sufficient to account for death. A medico-legal examination should be held in such a case in order to estimate how much the death was due to the accident or violence, and how much to the physical condition of the deceased. A *post-mortem* examination of the body may show that death resulted from natural causes, and not from traumatism. Thus Dr. Socquet reported the following to the Medico-legal Society of Paris:

An old man was killed instantly as the result of a carriage accident. The physician called to examine the body of the deceased, not finding a lesion sufficient to explain the cause of death, demanded a necropsy. This was granted, and, when the body was opened thirty hours after death, no trace of traumatism was found in any organ; on the other hand, however, a large, soft, fluctuating tumor of the left kidney was found, which, when punctured, discharged 7½ litres of uniform, inodorous pus. In this case death was not due to traumatism.

Pruritus and Cancer.—The functional affection, pruritus, may arise without obvious cause, as the pruritus senilis observed in the old and the pruritus hiemalis, which develops on the approach of cold weather, and disappears when the weather becomes warm. Pruritus may also be symptomatic of gout, diabetes, Bright's disease, neurasthenia and hysteria. Dr. Wickham reports to the Society of Syphilography and Dermatology of Paris, June 6th, that in four cases of pruritus or prurigo, for which he had been consulted, he found visceral cancers. Abdominal carcinoma, and particularly cancer of the stomach may cause intense and persistent pruritus. This sign, which, according to Dr. Wickham, is but little known, is of great importance, as it may appear long before the common early signs of cancer, and may thus reveal its presence.

Adrenalin as a Hemostatic in Hypertrophied Prostate and Urethral Stricture.—Dr. Gottschalk, Paris, states that in hypertrophy of the prostate a urethral injection of 2 cubic centimeters (m. 34), of the 1-1,000 solution of adrenalin enables the patient to urinate spontaneously, even in a case of complete retention. In a very tight stricture of the urethra, the previous injection of a few drops of the same solution into the urethra enables a surgeon to pass a catheter, owing to the lessened congestion of the mucous membrane of the urethra produced by the adrenalin. Prof. Frisch, of Vienna, finds adrenalin useful in preventing hemorrhage when using the cystoscope in bladders which bleed easily. He uses a solution of 1-10,000, of which he leaves 3 or 4 ounces in the bladder for a few minutes. J. J. C.

PERSONALS.

Dr. F. N. G. Starr spent ten days of last month on the Georgian Bay.

Dr. J. W. Lesslie, of St. Patrick Street, returned from England on the 11th ult.

Dr. D. W. McPherson has removed from Carlton Street to 556 Bathurst Street.

Dr. Wilmot A. Graham has been appointed house surgeon to the Toronto Western Hospital.

Dr. R. D. Rudolf left two weeks ago for Germany. He will return *via* England in September.

Dr. Fierheller, of Markham, Ont., has moved into the city, and has taken up house at 535 Sherbourne Street.

Dr. and Mrs. Baker, of Cannington, spent a week with Dr. and Mrs. Fierheller, at 535 Sherbourne Street, last month.

Dr. J. M. MacCallum will assume the responsibility of a benedict this fall. Hearty congratulations, Mac. It's time, you know.

Dr. W. B. Thistle has been confined to the house for some little time now with gastro enteritis, and is under the care of Dr. R. J. Wilson.

Dr. and Mrs. Murray McFarlane left July 17th for a six weeks' trip to Muskoka, Lake Nipissing, and Lake George, in the Adirondack Mountains.

Dr. Vaux, Dr. L. Vaux and the Misses Vaux were guests during July of Mrs. W. E. Sanford, of Hamilton, who is spending the summer at "Wesanford," Muskoka.

We regret to announce the illness from typhoid fever of Dr. H. B. Anderson. The doctor is confined at Toronto General Hospital, and we hope will soon be convalescent.

Dr. R. A. Stevenson, of Bloor Street, left for England on the 16th ult., sailing by the *SS. Canada* from Montreal. He will return about the beginning of September.

Dr. Geo. T. McKeough, of Chatham, left on the 17th of July for Germany, where he will spend the next four or five weeks.

Dr. W. J. Neilson, member for North Winnipeg in the last Manitoba Legislature, died July 17th, after an illness extending over several months. He was born in Perth, Ont., in 1854.

Congratulations are in order to our co-editor, Dr. George Elliott, of 129 John Street, who became the father of a bouncing boy on the 11th ult., increasing his family circle to no less than three.

Dr. F. N. G. Starr moved into his new residence, 112 College Street, on July 2nd. The doctor is to be congratulated upon securing one of the handsomest and most substantially built houses in Toronto.

Drs. Alex. McPhedran, R. A. Reeve, I. H. Cameron and D. K. Smith spent the month of July in the Old Country, and are expected home any day now, with the exception of Dr. D. K. Smith, who will not return for another month.

Dr. G. C. Draeseke, of Dundas, lately house surgeon at the Western Hospital, and a graduate of the University of Toronto, has been appointed surgeon on the C. P. steamer *Empress of China.* He left on the 2nd ult. to assume his new duties.

Dr. Wm. A. Creswell, silver medalist of class '01, of Toronto Medical School, has been appointed on the house staff of the Toronto General Hospital. Dr. Creswell has just returned from the Old Country, where he has been pursuing post-graduate work for the past two years. While abroad he obtained the degrees of L.R.C.P. and M.R.C.S.

The Canadian Pacific Railroad are offering every inducement to doctors who will be in attendance at the Canadian Medical Association at London, Ont., from the 24th to the 28th inst. to travel by that road. In case of 300 or more making the trip, delegates and members will be returned home free of charge, or if 50 or more, and less than 300 are present, return trip will cost but one-third. As will be noticed on another page of this issue, the usual arrangements as to obtaining a standard certificate from the agent on starting will be in force, so that we would advise all members to take this necessary precaution on leaving home.

News of the Month.

CANADIAN MEDICAL ASSOCIATION MEETING, LONDON, AUGUST 25-28.

PRELIMINARY PROGRAMME.

President's Address. W. H. Morehouse, London.
Address in Medicine. Jas. Stewart, Montreal.
Address in Surgery. Alex. Hugh Ferguson, Chicago.
Address in Gynecology. Matthew D. Mann, Buffalo.
"The Treatment of the Inebriate." A. M. Rosebrugh, Toronto.
Paper (title to be announced). Perry G. Goldsmith, Belleville.
"Total Ablation by Bisecting the Uterus." T. Shaw Webster, Toronto.
"Inguinal Hernia of an Undeveloped Uterus and Appendages, with Presentation of Specimen." R. Ferguson, London.
Paper (title to be announced). A. Lapthorn Smith, Montreal.
"Report of Two Cases of Hour-Glass Contraction of Stomach." Henry Howitt, Guelph.
"Cardiac Affections in Influenza." E. G. Wood, Nashville.
"Amyotrophic Lateral Sclerosis." A. McPhedran, Toronto.
"Orthopedic Surgery at the Present Time." C. W. Wilson, Montreal.
"Internal Medication for Direct Remedial Effect." George M. Aylesworth, Collingwood.
"The Role of Eye-Strain in Civilization and Medicine." George M. Gould, Philadelphia.
"The Inter-Relations of Diabetes and other Constitutional States." George F. Butler, Alma, Mich.
"Gun-shot Wound of the Upper Arm, with Non-Union of Humerus, and Destruction of Musculo-Spinal Nerve—Operation six months later—Recovery." Hadley Williams, London.
"Discussion on the Treatment of Typhoid Fever." W. P. Cavan, Toronto; J. Herald, Kingston; W. B. Thistle, Toronto; H. A. McCallum, London.
"Discussion on the Diagnosis Treatment of Tuberculous Peritonitis." A. B. Atherton, Fredericton, N.B.; A. Groves, Fergus; Herbert A. Bruce, Toronto, and L. Coyteux Prevost, Ottawa.

"The Technique of Gastro-Enterostomy." Theodore A. McGraw, Detroit.

"The Relation between the General Practitioner and the Specialist in regard to Intra-nasal Work." J. Price-Brown, Toronto.

"Personal Experiences with Alexander's Operation." H. Meek, London.

"Auto-Infection." E. Hornibrook, Cherokee, Iowa.

"The Country Doctor." J. S. Sprague, Stirling.

"A Lantern Lecture on Open-air Life in the Treatment of Pulmonary Tuberculosis." J. H. Elliott, Cravenhurst.

"The Size of the Pupil as an Aid to Diagnosis." J. T. Duncan, Toronto.

"Thrombosis of the Femoral Vein following Aseptic Laparotomy." E. R. Secord, Brantford.

"Gastro-Enterostomy with Report of Cases." Ingersoll Olmsted, Hamilton.

"Radical Cure of Hernia." A. Groves, Fergus.

"The Decline and Fall of Atropine." G. Sterling Ryerson, Toronto.

"The Medical Treatment of Diseases of the Nose and Throat." John Hunter, Toronto.

"An Interesting Case." G. Herbert Burnham, Toronto.

"Concealed Accidental Hemorrhage." Adam H. Wright, Toronto.

"The Surgical Treatment of Bunions, by Tubby's Operation." James Newell, Watford, Ont.

Railway Transportation.

Intending delegates to the thirty-sixth annual meeting of the Canadian Medical Association, which will be held at London, Ont., on the 25th to the 28th of August, should take careful note of the following instructions as regards transportation rates. As a good many wrote to the General Secretary last year for forms to fill in, it might be well to state that no such forms are required. All a delegate has to do is to purchase a single first-class ticket to London, at the same time asking the agent at starting point for a *Standard Convention Certificate.* These certificates, when signed by the General Secretary, will entitle holders thereof to return fare free, providing there are 300 or more at the meeting holding *Standard Convention Certificates.* These arrangements apply as well to the wives and daughters of physicians.

Maritime Provinces.—Delegates travelling to London on the Standard Certificate plan *via* the Intercolonial Railway to Montreal will be given return fare free from Montreal east, provided that there are ten or more delegates in attendance at the meeting holding said certificates.

Manitoba and the Territories.—From Manitoba and the Canadian North-West, one-way tickets to be purchased to London, and Standard Certificate being secured at the time of purchase, these certificates, when presented at London, duly signed by the General Secretary, will entitle the holder thereof to be returned free, if 300 or more paying railroad fare are in attendance. If less than 300, and more than 50, the same arrangements as for Ontario and Quebec, viz., one-third fare return will be in vogue. Tickets purchased west of Port Arthur, purchased in time to reach London for the Convention, will be accepted for return up to and including September 15th. Delegates taking the Superior and Huron Lake route one way will on presentation of certificates be charged $4.25 extra. If Lake route is used both ways the charge will be $8.50 extra.

British Columbia.—The Canadian Pacific Railway officials at Winnipeg have not been able to make arrangements for British Columbia up to the present time. Announcements of these will be made in the daily papers of Vancouver and Victoria, if secured, some time during the first week in August.

Entertainment.

The Entertainment Committee at London proposes to entertain visiting delegates somewhat as follows:

On Wednesday afternoon a reception will be held at the Kennels for the visiting ladies by the ladies of London. On the same afternoon at about 4 p.m. the members of the Association will be entertained at Springbank, London's pleasure resort. Leaving Springbank at about 5.30 p.m., the delegates will be taken to the London Asylum grounds, where they will be entertained by the Provincial Government for the balance of the evening. On Thursday, through the kindness of Messrs. Parke, Davis & Company, the Entertainment Committee have provided for an excursion to the celebrated laboratories of the extensive pharmaceutical house at Walkerville and Detroit. Arrangements have been made for a special vestibuled train to leave London at 8 a.m. sharp, Thursday. Walkerville will be reached at about 10.30 a.m., and the visit will be made to the Walkerville laboratories. The delegates will then be taken for a trip up the river, luncheon to be served on board. They will be landed at Messrs. Parke, Davis & Co.'s own dock, at the Detroit laboratory, for the inspection of their Scientific Building at about 2.30. At the conclusion of this inspection other arrangements will be made for the entertainment of the members until 6.30 p.m., when a banquet will be tendered to the members of the Canadian Medical Association at the Russell House, Detroit, by Messrs. Parke, Davis & Co. Between 9.30 p.m. and 10.30 p.m. the physicians will be taken to the Brush Street depot, Detroit, and returned to London by a special train.

Hotel Accommodation, Etc.

During the coming meeting of the Canadian Medical Association in London the several large hotels will be able to accommodate most of the visiting members, and in addition to this the Reception Committee having charge of receiving the visiting delegates will have lists of good boarding-houses where those wishing them may have rooms. The Reception Committee at London hopes that no one will stay away fearing lack of accommodation, as the London medical men will do their utmost to make their stay agreeable. Dr. J. S. Niven, 423 Colborne Street, who is chairman of the Reception Committee, will be pleased to secure rooms for anyone writing for them in advance. Anyone desiring any further information should address either the local Secretary, Dr. Hadley Williams, Park Avenue, London, or the General Secretary, Dr. Geo. Elliott, 129 John Street, Toronto.

THE NEW BATTLE CREEK SANITARIUM.

Surely the wonderful house that Jack built, the descriptions of which made entrancing the hour between daylight and darkness of the yesterday of childhood, quite pales into the reality of this twentieth century of inventive genius in the art of building and architecture.

The new Battle Creek Sanitarium which, Phœnix-like, has arisen out of the ashes of the old, destroyed by fire February 18th, 1902, is replete with every new improvement that pertains to health and comfort, and is luxurious as to furnishings and appointments. During its rebuilding several extended visits to Europe were made by its managers for the purpose of studying the work and experience of others. The methods of administering baths, massage and similar modes of treatment have been studied under specialists in all the leading countries of Europe, from Stockholm to Naples, and in special lines investigations have been extended even to the Orient. In style, the main building is of the Italian renaissance, situated in a beautiful garden, which broadens into very extensive grounds.

The main building is 525 feet in length, exclusive of the porches, and forty-six feet in width, the width being increased at either end and in the centre to fifty-eight feet. It is five stories in height, with a ten-foot basement, and a roof storey of lighter construction and somewhat less width, occupying nearly the whole length of the building.

The treatment buildings are each 150 feet in length, sixty-six feet in width, and three stories in height above the basement. The gymnasium is 120 feet in length, and nearly the same height as the treatment buildings. The combined length of all the

structures is very nearly the same as that of the old buildings, the average height somewhat less, and the width a little greater.

The total area of porches and verandas is over thirty-two thousand square feet, or about one and one-fourth acres, affording standing-room for more than fifteen thousand people, and furnishing ample room for more than a thousand couches, accommodating as many patients with air and light baths. This calculation includes the roof garden, one of the most practical and attractive features of the institution, located at the south end of the sixth storey, and beautified in the summer season by palms, flowers, and foliage plants.

North of the roof garden, and adjoining the dining-room, is the spacious solarium, which, in addition to numerous long windows on the sides, is provided with an enormous skylight, through which the sunlight pours down, to the great benefit of those whose extreme feebleness compels them to take their daily light baths indoors.

The dining-room proper, extending from the serving-room to the solarium, is 170 feet in length and fifty feet in width. To this length should be added that of the solarium, which may be used when needed, giving a total length of 220 feet, and an area of 11,000 square feet, or a little more than one-fourth of an acre.

The surgical operating-rooms are separated from the culinary department by solid walls, with no communicating openings. The operating-room is spacious and high, provided with a mammoth skylight and ample sidelight as well as artificial lights. It is flanked on either side with anesthetic rooms, bandaging-rooms, a preparation-room, and other necessary apartments, including an emergency room. Here is ample room for surgical stores and supplies of all sorts, and every appliance pertaining to a thoroughly equipped modern operating-room.

The walls are finished with white cement, which is polished as smooth as glass, and is almost as hard as stone. The floor is of marble mosaic. Everything is non-absorbent and easily kept free from dust and germs.

The two bath buildings are identical in size, appearance, and arrangement. The south side of the basement of each building is devoted to lavatories, special douches, and other treatment requiring toilet arrangements. Special ventilation has been provided for these rooms. Rooms for nurses' supplies and some class rooms are also found in the basement. The east end of each basement is cut off for a swimming pool thirty feet wide and sixty feet in length, the pool running crosswise of the building.

By a special and unique arrangement, light and air are admitted to every part of the extensive bath and treatment apartments. This is accomplished by means of a light shaft, nine feet

wide, and extending nearly the entire length of the bath building, reaching from the first floor to the roof.

The various forms of electric light baths in use in this department are a unique and original feature of the Battle Creek Sanitarium. It is here that these baths were invented and first used. Thousands are now in use in this country and in Europe.

In the basement of the gymnasium is found machinery for the application of mechanical Swedish movements. Many of these machines used in the institution are extensively manufactured in the sanitarium machine shops, which are constantly employed in work of this sort for the benefit of the sanitarium and its branches. Of these machines may be mentioned vibrators, kneaders, shakers, breathing machines, mechanical trainers and manipulators, and various ingeniously contrived mechanisms for encouraging feeble hearts, weak lungs, and slow stomachs to healthful activity.

THE FIRM OF HOWARDS & SONS, STRATFORD, LONDON.

THE following facts as to one of the very oldest manufacturing pharmaceutical firms in the Old Country will be interesting, and we don't think that it will be out of place to present them to our readers:

The present firm consists of three of the grandsons and two great-grandsons of the founder, Luke Howard; Colonel Howard, C.B., D.L., J.P., Alderman Essex County Council, having retired from the firm at the end of 1897. The remaining partners are William Dillworth Howard, F.I.C., the eldest son of John Eliot Howard, who studied chemistry under Dr. Williamson, at the Birkbeck laboratories of the University College, Gower Street; David Howard, D.L., ex-Vice-President of the Chemical Society, ex-President, and now Vice-President of the Society of Chemical Industry, and Treasurer of the Institute of Chemistry, who studied chemistry under Dr. Hofmann at the Royal College of Chemistry in Oxford Street, author of various papers on the Cinchona Alkaloids; and Theodore Howard, both sons of Robert Howard; Alfred Gravely Howard, F.L.S., F.C.S., eldest son of Joseph Howard, M.P., and David Lloyd Howard, F.C.S., son of David Howard, who both studied chemistry at the Birkbeck laboratories. It has always been the rule of the firm that principals themselves should superintend the details of the working of the business. Organization may do much to reduce the working of a factory to a system, but at any rate where a very great variety of products are turned out, and where fresh work has continually to be undertaken, it is impossible to keep too close a connection between the heads and the practical workers. In order to carry this out completely, members of the firm have in their younger days themselves worked in

the factory; for the practical application of theory to practice requires, if it is to be successfully carried out, the personal experience of both.

The works now comprise not only the original buildings of a hundred years ago, but the adjacent buildings on the property of the City and Merchant Taylors Company at the City Mills, and other buildings erected on ground belonging to the firm adjoining the City Mills. Thanks to the considerable area available, it is possible to carry on a very large proportion of the work in one-storey buildings, and to isolate them in a way impossible in a more crowded neighborhood. It is thus possible not only to diminish very greatly the risk from fire—no small consideration in a chemical factory where inflammable materials must be used—but also to manufacture poisonous substances in separate buildings, and never to allow them to be in the same place as other goods till they are packed and ready to send out. The area of the buildings thus employed is about three acres, spread over five and a half acres of ground, and in addition there are a number of dwelling-houses occupied by the employees of the firm; adjoining this block of buildings is a piece of marsh-land, which is gradually being filled up with the waste from the various processes carried on—a process that will ultimately render it a valuable site for building. The works are situated on one of the many branches of the Lea, which used to supply ample power for the water-mill, from which the name of City Mills is derived, and which formerly was of great value also as affording an unfailing supply of pure water and enabling barges to bring up goods from the docks to the wharves which surround the works.

Unfortunately these conveniences are now ancient history; the East London Water Company has appropriated the water of the Lea Valley, except in times of floods, when Stratford has a great deal too much. Happily artesian wells afford a constant supply of excellent water drawn from the chalk at a depth of 250 feet, and what would otherwise be a very serious evil is thus avoided. The Great Eastern Railway runs at the side of the premises, and a siding replaces the water carriage, which has become so costly, owing to the rise in lighterage charges, that it is avoided if possible.

In addition to the Stratford business the firm also continue that of their old friends, Messrs. Hopkin & Williams, at Cross Street, Hatton Garden, and Wandsworth, carrying on the manufacture of fine chemicals for which the late Mr. Williams was so justly celebrated.

THE MEDICAL COUNCIL.

THE *News,* Toronto, in referring to the recent session of the Ontario College of Physicians and Surgeons, stated that that body is to be congratulated on having met a situation of difficulty with dignity and sense. This situation, it is true, was not one of its own creation, or, rather it was the creation of the last Council, for the present body received its mandate of existence only last fall, when the representatives of the various bodies constituting it were elected. That Council, with both rashness and haste, passed a regulation for matriculation, which, on its most obvious interpretation, would have practically closed the door of the medical profession in this Province to all but the sons of the wealthy.

That the old Council did not intend this, whatever a few of the members had in view, may be at once conceded, but it only serves to bring out quite clearly the fact that a rash step on a most important matter was being taken without due consideration of its import, and it gave color to the charge that the members, who were all seeking re-election, wished only to present a showy record to their constituents. The proposed matriculation had to be greatly modified, and the curriculum eventually demanded by the Executive Committee, of course, fell far short of the original demand. At the recent meeting this decision came up for review, and, of course, was severely criticised by the "last ditch" members, but the moderation and good sense of the Council, once again supreme, brought about by a large majority the endorsation of the action of the Executive Committee. It further adopted the proposal to refer the whole question of matriculation to a small select committee, which is to report on the subject next year. This will ensure full consideration of a difficult matter.

On other points there is evidence of the desire of the Council to meet a modern situation in an enlightened and open-minded manner. The curriculum has undergone revision, and, while it is not in every detail satisfactory, it is now much more in the line of progress than it was. For the first time, also, the Council has adopted measures which permit the various medical teaching institutions to exercise their own discretion in determining the time which is to be allotted to instruction in a subject of the curriculum, a point that ought to have always been within the sphere of the teaching organizations. The business of the Council is to find out whether a candidate for registration as a practitioner of medicine in this Province possesses the requisite knowledge, and a curriculum to that end is necessary, but beyond the number of years and months to be devoted to each subject, the Council should not in the past have gone, for its exaction of a stipulated number of hours of instruction in each subject meant that every teaching in-

stitution had, in the minutest details, to conform to the standard of the Council. This practically denied all independence to teaching staffs, whose experience in this line ought to be the only factor in determining, within certain limits, the amount of instruction to be given in each subject. That the customary attitude of the Council on this point is abandoned is of great significance, for it will help very considerably in the project, now almost consummated, of building up one great Medical Faculty in Toronto.

Taken altogether, then, the action of the Council has been prudent, and it will no doubt serve to win back what was lost by the action of last year. And this is a matter for satisfaction, not alone to the profession, for the Council is the servant of the public, but it only serves the latter when it acts wisely.

TUBERCULOSIS AT THE ST. LOUIS EXPOSITION OF 1904.

THE management has sent out the following notice to all the members and delegates, named by the Governors of States and by State Medical Associations and other bodies interested in the prevention of tuberculosis:

NEW YORK, July 14th, 1903.

Dear Colleague,—At a meeting of the Council of the American Congress on Tuberculosis, a resolution was adopted, unanimously fixing the annual dues of the Congress of 1903 at the normal sum of $1.00, from June 4th, 1902, to June 10th, 1903.

The Treasurer was ordered to send out bills for the annual dues to every enrolled member of the Congress of 1902. If you wish to remain a member of the Congress of 1903, please remit your dues, $1.00, and your name will be entered on the roll of members of the Congress of 1903. Those who prefer not to be so enrolled, will advise the undersigned or the Secretary.

You are also reminded that by action of the council accepting the offer of the *Medico-Legal Journal,* it was provided, that,

1. *The Medico-Legal Journal,* Vol. 21, commencing June number, 1903, will be sent to every member or delegate to the Congress of 1902, or to any new member, at half price, $1.50, payable in advance.

2. That the *Medico-Legal Journal* will send, when it is completed, the Bulletin of the Congress of 1902 to every member or delegate not enrolled, nor a present subscriber, at half price, $1.50, if paid in advance. which will include membership in the Congress of 1903, by action of the Council of the American Congress of 1903.

Respectfully yours,

CLARK BELL, *Treasurer.*

A similar notice has also been sent to boards of health, national,

State and municipal, inviting their members to co-operate and contribute papers to this congress; send titles to the officers, and to each body to send at least three delegates to the Congress.

The Congress of 1904 will be a great gathering, and it is hoped will do great good.

ITEMS OF INTEREST.

Surgeons at Grace.—Drs. R. W. Rutherford, Chatham, Ont.; C. A. Warren, and G. E. Wilson, of Toronto, have been appointed house surgeons to Grace Hospital for the year 1903-4.

Hospital Appointments.—The following appointments have been made at the Hospital for Sick Children, for the house or resident staff, for the year beginning 1st July: Drs. James Biggar, Toronto; W. Edward Gallie, Toronto; Allen W. Canfield, Woodstock, and R. A. Fraser, Toronto.

Polk's Medical Register.—The eighth revised edition of this well-known work is now under way, and will appear in due time. Send for descriptive circulars, and do not be deceived by imitators. Polk's Medical Register and Directory has been established sixteen years. R. L. Polk & Co., Publishers, Detroit, Mich.

St. Michael's Hospital Staff.—The following doctors have been appointed to the house staff of St. Michael's Hospital for the ensuing year: Dr. F. J. Doherty, of last year's staff, Dr. H. J. Sullivan and Dr. Baldwin. Drs. C. H. McKenna and Marlow have been appointed assistant surgeons, and Drs. E. B. Shuttleworth and M. M. Crawford added to the outdoor staff.

Hospital Day in Brantford.—July 7th was Hospital Day in Brantford. Young ladies, representing the auxiliary to the John H. Stratford Hospital, "manned" the street cars and collected the fares. All collections were in silver, no tickets being accepted. The proceeds of the day have been donated by the street railway officials to the Ladies' Auxiliary. The money will be spent in purchasing a new isolation ambulance for the city, and in providing flowers and delicacies for the sick at the hospital.

Deaths by Traction Companies in Chicago.—A bulletin just issued by the Census Department shows that the Chicago traction companies killed seventy-two persons in one year and injured over 1,800. "I do not doubt that we injured close to 1,800 persons in a year," said one of the Union Traction officials. "Last year our personal injury item was over $600,000. I would say that over 50 per cent. of the injuries result from persons alighting and getting on our trains. If we operated but one closed car and did away with the trailer system entirely nearly all these injuries would be avoided."—*N. Y. World.*

Suicides Among Doctors.—Suicides are increasing remarkably among doctors in Great Britain. The reason is not far to seek, according to a statistician, who points out that the physician who might calculate on an income of more than £400 ($2,000) a few years ago can count to-day in corresponding circumstances on only something above £200 ($1,000). The causes of this depreciation of income are two, the first and more important being the improved health of the country at large, and the diminishing death rate. The medical profession, as a matter of fact, is working in these days of preventive medicine, towards its own extinction. The second cause is the multiplication of universities, which are turning out more doctors than there is a demand for.

The Canadian Field Hospital Doctors.—The regulations for hospital attendance, required of candidates for the Medical Council examinations, do not, it seems, cover service abroad with a field hospital corps. For this reason the following successful candidates at the Council examinations, who served with the Canadian Field Hospital Corps in South Africa, but whose names did not appear in the published lists of passed candidates, required to have their hospital attendance in South Africa sanctioned by the Council at their meeting last month. The names are: D. Macdougall King, M.B. (Toronto University); George C. Ferrier, M.B. (Queen's University); Fred. J. Morrow, M.B. (Western University), and James L. Biggar, M.B. (Toronto University). They are now full-fledged doctors, and entitled to practise their profession.

Consolidation of the "New York Medical Journal" and the "Philadelphia Medical Journal."—In union lies strength. These two influential medical journals have not only gained the strength of a reputable career as individualities, but, under the unification of the two, an added interest to the profession at large, and no doubt a wider subscription list, as many physicians find subscribing for numerous medical journals and books beyond their means. Personally, we are sorry of the change. It has been so long a pleasure and a privilege to open on Monday mornings our copy of the *New York Medical Journal,* and then take a look at what was doing in the Quaker City; but now we are going to find it all under one cover. We heartily wish the old friends, with the new composite face, the realization of their highest ideals, and continued success as a business enterprise. W. A. Y.

Studying Malaria.—A Parliamentary paper, just issued, reviews the progress of the investigation into malaria and other tropical diseases which has been carried on in connection with the School of Tropical Medicines, opened in 1899, largely on the initiative of Colonial Secretary Chamberlain. The report shows that the school has hitherto just paid its way. Much valuable

teaching has been done, but Mr. Chamberlain anticipates that £12,000 will be required for increased accommodations. In 1901 the doctors went to India. At Bengal and in the Punjab they found, as in West Africa, that the native children have the parasites in their blood, and they must, therefore, be regarded as a source of infection. The doctors commenced their investigation of blackwater fever in Central Africa, and then on the west coast of Africa and India. They concluded that the disease was essentially of malarial origin, and was not due to a different parasite.

New House Doctors at Toronto General Hospital.—The following graduates in medicine and members of the College of Physicians and Surgeons of Ontario have been appointed resident house surgeons at the Toronto General Hospital for the year 1903-1904: From Toronto University—W. A. Creswell, Bondhead; J. A. S. Graham, Toronto; W. T. McLaurin, Toronto; E. M. Walker, Toronto; A. B. Wright, Toronto; G. A. Winters, J. R. Parry, alternates. From Trinity University—Edgar Brandon, Cannington; R. W. Irving, Ingersoll; M. J. Harris, Glencoe; W. A. McCauley, Warkworth; H. Rundle, Emsdale; M. Cook, T. H. Bell, alternates. The following are the house staff, who have just completed their term, and are now retiring after their year's service, 1902-1903: Drs. J. D. Chisholm, Berlin; S. Johnston, Toronto; R. Neil Kyles, Camilla; W. H. Lowry, Guelph; J. A. McCollum, Toronto; R. H. Mullin, Hamilton; R. Parsons, Emery; A. B. Rutherford, Owen Sound; P. W. Saunders, Toronto; G. W. Ross, Toronto.

Dr. Hodgetts, Provincial Medical Inspector, Denies Misstatements as to Smallpox in Essex County.—In view of the misstatements which have recently appeared in the lay press, casting reflection on the medical men of portions of Essex County, Dr. Hodgetts, the Provincial Medical Inspector, states that during his recent inspection, he met with no cases which had been reported to the local health authorities as chickenpox, and which proved to be smallpox; and, further, there were only two families in quarantine in Anderdon Township, where the local board have been doing their best for some months to stamp out the disease. The difficulties in Malden Township had been increased by reason of the fact that chickenpox had been prevalent in some portions of the municipality about the beginning of the year, and since then some of these persons had developed smallpox. In other instances the disease being of a mild type, had not been treated by a medical man, and many of the residents doubted that the people were suffering from the more serious ailment. The physicians were in every case familiar with the disease, and were most anxious to assist the health authorities in carrying out the law.

Montreal's Physicians and Board of Health are to Co-operate in a War upon Tuberculosis.—The Board of Health of Montreal and the Montreal League for the Prevention of Tuberculosis have decided to act together in an attempt to check the spread of that disease. In order that they may the more readily combat the evil, 599 physicians in the city and suburbs have been requested to co-operate by voluntarily reporting the existence of cases of consumption which are sufficiently advanced to prove a menace to those who come casually in contact with them. With this knowledge in hand, an official placed at the disposal of the League by the city, will regularly visit the houses where these cases reside, to instruct both the patient and his entourage as to simple methods of cleanliness and disinfection, as well as to the disposal of sputum. Between three and four new cases of consumption are discovered every day. The League, it is understood, will very shortly be in a position to arrange for the care of those among the sufferers who, besides being indigent, are known to be hopelessly ill. In fact, an application has already been made to the Provincial Government for the lease of a tract of land in the St. Agathe region, to be used as a sanitarium.

Has Seen Many Lands.—Dr. J. F. Boyle, son of Mr. David Boyle, curator of the Ontario Educational Museum, has returned from a two years' trip round the world, and has brought with him many rare specimens of handiwork, relics, skins and horns from many countries. Dr. Boyle, when asked how the Canadian was received and considered abroad, said in Great Britain they were received with open arms, and in all other places where he had seen them the Canadian had an established reputation for honesty and sobriety. Dr. Boyle for some time was the surgeon aboard the troopship *Staffordshire,* which conveyed the Boer prisoners from Bermuda to South Africa, and states that the difficulty with most British professional men in foreign countries is their inclination to drink themselves drunk. At the "White Man's Grave," as Secondi, on the west coast of Africa is called, Dr. Boyle said he was offered £1,200 per year and supplies if he would remain there in the ship's service, and for one morning's work made $350 looking after the duties of another physician whose good "Scotch" had incapacitated him for duty. Africa, he says, is overstocked with all manner of professions. Dr. Boyle has some interesting souvenirs from the Boer prisoners—a pair of boots and a couple of trick boxes made of teak wood and a jackknife are perfect. Specimens of Indian carving in the line of elephants, etc., are masterpieces.

An Interesting Feature in Connection with the Canadian Medical Association.—One of the most interesting features in

connection with the forthcoming meeting of the Canadian Medical Association, which is to be held in London, on August 25th to 28th, inclusive, is the proposed entertainment of the physicians in attendance by Messrs. Parke, Davis & Co., who have generously offered to relieve the local physicians of this important part of their work in connection with the meeting. It is the intention that the members of the Association shall leave London about 8.30 a.m. on August 27th, reaching Walkerville about 11 o'clock, when a visit will be paid to the Canadian laboratory, and subsequent to this a boat trip on the Detroit River and Lake St. Clair will be followed by a visit to the Detroit laboratory. After another short sail a banquet will wind up the day's outing, and it is expected that a special train will reach London on its return trip not later than 11.30 p.m. We strongly recommend the physicians who may be in attendance at this meeting to avail themselves of this excursion, for we know from former experiences that Parke, Davis & Co. never do things by halves, and we anticipate that Thursday, August 27th, 1903, will be a day long to be remembered by the members of the Association. We consider that this action on the part of Parke, Davis & Co. is a most liberal one, and feel sure that the proposed trip to Detroit will be one of the banner features of this year's convention.

New Hospital for Epileptics.—The Provincial Secretary's Department has had a great deal of work on hand recently. Inspectors Christie and Noxon, with Architect Heakes, of the Department of Public Works, have been at Woodstock to consider the best plan for laying out the grounds and for locating the buildings to be erected for the care of epileptics. The contracts for two cottages, the necessary offices and the power house will be let immediately, and work proceeded with. The power house will supply electric light and power, with steam for the laundry. Accommodation for one hundred patients will be provided in all the best and most modern styles, and nothing will be wanting for the comfort, care and, if possible, cure of these people. The institution will be extended as necessity demands. Plans are almost ready for a cottage to be erected at Orillia for weak-minded women, in accordance with the promise of the Premier and Mr. Stratton to the deputation from the National Council of Women, which asked for an experiment in the care of these unfortunate women and girls. Mr. Stratton was greatly impressed with the facts presented by the deputation, and will endeavor, as far as possible, to carry out the suggestions made. A residence is to be erected for the superintendent of the institution at Cobourg. The ground recently purchased for the Mimico Asylum is being cleared of buildings, and it will be levelled and utilized for the benefit of the inmates until the further extension of buildings becomes necessary.

Results of Council Examinations.—The results of the examinations of the Royal College of Physicians and Surgeons of Ontario were made known on July 2nd. The successful candidates in the final year are: A. H. Anderson, Toronto; S. W. Arthur, Inverary; D. M. Allison, Adolphustown; G. H. L. Armstrong, Richard's Landing; G. M. Atkin, Milverton; A. E. Archer, Moorefield; A. Brown, Motherwell; J. M. Baldwin, Deer Park; C. T. Ballantyne, Ottawa; J. B. Buel, Mallorytown; E. Brandon, Cannington; J. C. Connell, Kingston; C. Carswell, Bond Head; J. Campbell, Ridgetown; Annie Davis, Hagersville; A. Fisher, Toronto; G. W. Fletcher, Blenheim; C. W. Freeman, Freeman; R. F. Foster, Toronto; J. S. Graham, Toronto; J. E. Godfrey, Meaford; W. Alex. Graham, Denbigh; E. A. Gray, Waubuno; W. J. Harris, Glencoe; H. R. Hutton, Centralia; E. T. Hoidge, Toronto; R. W. Irving, Ingersoll; E. P. James Galt, C. A. Jones, Mount Forest, L. W. Jones, Kingston; O. Klotz, Ottawa; H. Labrosse, St. Isadore; J. H. Laidlaw, Georgetown; F. E. Mellow, Sillsville; W. A. Meighen, Perth; W. S. Murphy, Portland; G. E. L. MacKinnon, Alexandria; C. H. Montgomery, Orillia; N. T. MacLaurin, Toronto; A. Moir, Dunnville; W. A. R. Mitchell, Perth; A. D. McEachern, Glencoe; G. McNeill, London; Elizabeth McMaster, St. Mary's; H. N. McCordick, Forest; D. McBane, St. Thomas; H. McGougan, Glencoe; W. A. McCauley, Warkworth; T. O. McLaren, Lancaster; C. G. McGreer, Napanee; C. H. McDougall, Strathroy; H. O'Neill, Mulock; W. J. Patterson, Peterboro'; J. E. (R.) Parry, Dunnville; R. M. Reid, Renfrew; J. W. Russell, London; R. W. Rutherford, Chatham; D. A. Sinclair, Toronto; E. G. Smith, Toronto; C. M. Stratton, Kingston; A. G. Smith, Delaware; L. L. Stauffer, Waterloo; D. Smith, Embro; H. J. Sullivan, Picton; A. S. Thompson, G. A. Winters, Toronto; G. S. Wray, Lloydtown; T. W. Walker, Elora; E. M. Walker, Toronto; J. M. Waters, Toronto; A. E. Wright, Toronto; W. T. Wallace, Orangeville; C. A. A. Warren, Toronto.

The Passing Jest.—*Physician:* So you are the new assistant. Have you had previous expeience? *Druggist's Assistant*: Yes, sir. I spent two years with John Smith, at B———. *Physician*: Then you must know my old chum, Dr. L———? *Druggist's Assistant*: Why, certainly. He's a nice old gentleman; kind to his patients; but forgetful at times, and he puts one medicine in nearly all his prescriptions. *Physician*: Magnesium sulphate? *Druggist's Assistant*: No, sir; ammonium chloride.

The Physician's Library.

BOOK REVIEWS.

American Edition of Nothnagel's Practice.

Diseases of the Pancreas, Diseases of the Suprarenal Capsules, and Diseases of the Liver. By DR. L. OSLER, of Vienna; DR. E. NEUSSER, of Vienna, and DRS. H. QUINCKE and G. HOPPE-SEYLER, of Kiel. The entire volume edited, with additions, by FREDERICK A. PACKARD, M.D., late Physician to the Pennsylvania and to the Children's Hospitals, Philadelphia; and REGINALD H. FITZ, M.D., Hersey Professor of the Theory and Practice of Physic, Harvard University Medical School, Boston. Handsome octavo of 918 pages, illustrated. Philadelphia, New York and London: W. B. Saunders & Company. 1902. Canadian Agents: J. A. Carveth & Co., Toronto, Ont. Cloth, $5.00 net; half morocco, $6.00 net.

This book is a valuable contribution to our knowledge concerning diseases of the pancreas, the suprarenal capsules and the liver. Any contribution on these subjects is of great interest to the profession, and these monographs will be found of unusual importance. In the sections on the pancreas and the suprarenals, the numerous experiments upon animals cited will be of great value to both the pathologist and the clinician, affording an insight into the more deep-seated processes, and offering an opportunity of comparing the disturbances of function produced by morbid conditions experimentally induced, with bedside and autopsy observations. In editing these sections the editor has availed himself of the writings of Korte and Mayo Robson, especially the latter's important treatise on the etiology and treatment of chronic pancreatitis. An editorial addition to the section on the suprarenal capsules, which seems especially noteworthy, is the investigations and discoveries on the active principles and therapeutic properties of suprarenal extract. The excellent article on the liver is thorough and full. The late Dr. Packard's careful clinical work, and his interest in the diseases of the liver, marked him as a most suitable person to edit this article. A survey of this work shows numerous valuable additions, embodying the latest contributions, besides expressions of his own views regarding subjects under discussion. He has devoted special care to diagnosis and treatment, including the surgical procedures that have recently found their place in this field.

With these numerous editorial additions the articles are brought fully up to date. There is perhaps less to criticise in this volume than in any that have yet appeared. A. M'P.

Kirke's Hand-book of Physiology. Hand-book of Physiology, revised by WILL H. ROCKWELL, JR., M.D., and CHARLES L. DANA, A.M., M.D., Professor of Nervous Diseases, at Cornell University Medical College, New York; Physician to Bellevue Hospital; Neurologist to the Montefiore Home. 17th American edition. With upwards of 500 illustrations, including many in colors. New York: Wm. Wood & Co. 1902. Canadian Agents: Chandler & Massey Limited, Toronto and Montreal.

Kirke's Physiology has for many years now been looked upon as one of the most reliable works upon this subject. To this book and the manner in which it elucidates a somewhat difficult subject, a very large number of medical men of to-day can look back for quite a long time as having been the means of assisting them in comprehending what to their student minds proved almost a *pons assinorum,* as it is very often the case that it is not so much the subject itself as the way in which it is presented to the reader that proves the stumbling block. When we looked over the 17th edition of Kirke, it was a very simple matter to recognize what a vast improvement this edition is to that one from which we first studied physiology nearly two decades ago. The 17th edition is what might be termed a thoroughly modern presentation of the subject, and can be looked upon as complete in almost every detail. The authors have revised almost every chapter, though the department to which most attention has been paid and care given is that devoted to physiological chemistry. The 75 or 80 pages on the subject of "Food and Digestion" are well worthy of the most careful perusal, as upon the proper understanding of this department of physiology depends largely the successful practice of medicine.

W. A. Y.

International Clinics. Vol. I., thirteenth series, 1903. Philadelphia: J. B. Lippincott Company. Canadian Agent: C. Roberts, 1524 Ontario Street, Montreal. Cloth and boards, profusely illustrated.

This splendid quarterly, edited as it is by men of eminence on both sides of the Atlantic, fully maintains its high standard of excellence in this latest volume. We can, however, only indicate its contents in such a brief review. The leading article on treatment is by William Osler, M.D., on "Aneurism of the Descending Thoracic Aorta." Further articles in this department are: "Treatment of Cardiac and Vascular Fibrosis," etc., by R. Webb Wilcox, M.D.; "Nauheim Methods in Chronic Heart Disease," by Thomas E.

Satterthwaite, M.D.; "Treatment of Diphtheria," by M. Howard Fissell, M.D. In the department of medicine we find articles on "Primary Intestinal Tuberculosis," by Frank Billings, M.D., and on "Pyloric Obstruction, Gastric Dilatation and Stagnation," by Max Einhorn, M.D. In surgery, timely and interesting articles are contributed by William Keen, M.D., F.R.C.S., England; Nicholas Senn, M.D., Ph.D., Thomas Jonnesco, M.D., George C. Ross, M.D., and Thomas H. Manley, M.D. John Thomson, M.D., F.R.C.S. (Edin.), contributes an excellent article on "Convulsions in Children." A. R. Shands, M.D., reviews the "Treatment of Weak Feet and Flat Feet." There are also other special articles, and a splendid review of the progress of "Medicine, Therapeutics and Surgery during 1902," by Edward W. Watson, M.D., and Henry W. Cattell, M.D. Practitioners and students will find this volume of great assistance in helping them to keep well-posted on the recent advances in medicine, surgery, etc. A. J. J.

Tuberculosis: Recast from Lectures Delivered at Rush Medical College in Affiliation with the University of Chicago. By Norman Bridge, A.M., M.D., Emeritus Professor of Medicine in Rush Medical College; Member of the Association of American Physicians. 12mo volume of 302 pages. Illustrated. W. B. Saunders & Company. 1903. Canadian Agents: J. A. Carveth & Co., Toronto. $1.25 net.

Brevity and clearness characterize this very complete work on tuberculosis. All aspects of the subject, with the exception of the treatment of surgical cases, have been carefully considered. There are excellent chapters on the bacillus of tuberculosis, the tuberculous process, forms of tuberculosis, pathology, etiology, symptoms, physical signs, diagnosis and prognosis of tuberculosis. The important feature of the work, however, is that a great deal of space is devoted to the prophylaxis and treatment of the process. The value of disinfection and isolation is dwelt upon and a plea made for sanatoria. He subdivides his treatment as follows: Hygienic, management of the diseased lung, climatic, medicinal and local, various special treatments and sanatoria. Each branch of treatment is skilfully presented and exhaustively described. A certain pleasing dogmatism prevails, so that one is never left in doubt as to what the author really means. Needless to say the advice of such an authority is always valuable. He places his greatest faith in the hygienic and climatic treatment of the disease, and believes that drugs are used much too indiscriminately. In sanatoria the author asserts that we have our most powerful weapons, not only for curative but prophylactic treatment; in them rest our best hopes for successfully fighting this dread disease. The medical practitioner will find this an exceedingly instructive and very readable work. A. J. J.