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THE ASYLUM, THE HOSPITAL FOR THE INSANE, AND THE TEACHING OF PSYCHIATRY.*

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THE Alienist is frequently asked if individuals who are mentally deranged receive as good care in a hospital for the insane as patients in the wards of a general hospital. Unfortunately, this question must be answered in the negative. Nor is the main reason for this disparity far to seek, if we consider for a moment the striking differences in the organization of the two classes of institutions.

In our general hospitals the medical care of the patients is entrusted to a staff the individual members of which are expected to devote themselves solely to the discharge of their professional duties. In the hospital for the insane the medical officers are fortunate if a large part of their time and energy is not absorbed in the performance of purely administrative work. Those of you who are familiar with the present system of organization in these institutions will appreciate this fact. Recently the medical superintendents of three of the best known hospitals for the insane in the United States have in my hearing expressed dissatisfaction with a condition of affairs that gives them so little opportunity or leisure in which to study the patients entrusted to their care. The importance of such an expression of opinion can hardly be over-estimated, for it means that the men best qualified by experience to judge such matters appreciate the existence of a radical defect and would be among the first to welcome a thorough reorganization of our hospitals for the insane. When a physician-in-chief finds that it is impossible for him to keep abreast of the times in the practice and study of his profession the work of all his associates on the medical staff must inevitably suffer from the lack of efficient and capable criticism, while, at the same time, they are deprived of an enthusiastic and inspiring leadership. In the face of such condition of affairs, the general medical public seeing that the resident physicians in our hospitals for the insane are permitted to devote only a portion of their time to their professional duties may

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be pardoned if they infer that very little is known regarding the causes and treatment of insanity and consequently conclude that the commitment of patients to hospitals for the insane is indicated only when all other methods of treatment have been tried and proved to be of no avail. As a result of this unfortunate belief, many cases of mental disorder, which might have been cured had they been dealt with in a hospital at the onset of the attack, are left without proper treatment until they have become hopelessly chronic.

Physicians as a rule do not willingly admit that metaphysics has influenced the practice of medicine. Nevertheless, the present defect, in the organization of our hospitals for the insane, is a concrete example of the potency of the belief, once generally entertained, to the effect that the ills to which the *materia cogitans non extensa* was heir, were too intangible to admit of any successful therapy. A strict adherence to the letter of the Cartesian philosophy would doubtless relieve the alienist of responsibility so far as many cases coming under his observation are concerned. It is fortunate, however, that there is to be found an increasing number of those who believe that, in all cases of insanity, there is an organic lesion situated, sometimes above, but quite as often, below the diaphragm. Even a slight degree of familiarity with the psychological reactions, produced by "calomy and laudamy," or with brimstone and molasses, should be sufficient to demonstrate the impossibility of always distinguishing clearly between the *materia cogitans non extensa* and the *materia extensa non cogitans*.

Improvement in the medical care of the insane, as well as hope of progress in the study of psychiatry, depends primarily upon the adoption by the managers of our hospitals for the insane of a system which shall make it possible for the medical officers in these institutions to devote themselves solely to their professional duties. Let us consider briefly how these ends may be attained. The most efficient and capable medical officers can only be found in those institutions in which the methods of organization are similar to those employed in the best general hospital. It must not be understood that I am advocating the introduction at present of such methods into all institutions devoted to the care of the insane. Reference is made solely to those which have assumed the name of hospital. The term asylum is generally assigned to the institutions which are given up solely to the care of the more chronic forms of alienation. The hospitals for the insane are of two classes. First, there is the type of hospital best represented by the German Psychiatric Clinic and of which we unfortunately have no counterpart on this side of the Atlantic. Secondly, generally in or near a large city

there is an institution formerly called an asylum but which having now assumed the name of hospital is in a stage of transformation. With reference to the first class, it is difficult to believe that the present century will pass without either the state or private munificence giving to the insane in all our large cities the benefits to be derived from the erection of fully equipped modern hospitals similar in construction and organization to the psychiatric clinics at Berlin, Kiel, Giessen and other German cities. The institutions are situated in the heart of the city. They have accommodations for from 80 to 200 patients. The physician-in-chief as a rule is professor of psychiatry in the university and is also engaged in active practice as an alienist. He, as well as the other members of the medical staff, is entirely free from administrative duties. Think of the amount of enthusiastic interest in the profession that may develop in the members of the medical staff, in such institutions, where the ties, binding this with the other departments of the university, are so numerous. Can there be a more worthy object of philanthropy than the very liberal endowment of such institutions in all our large cities, so that not only may the insane have the benefit of the highest medical skill, but at the same time every opportunity is given to those who are endeavoring to discover the laws, upon the keeping of which, mental vigor and sanity depend. It is interesting to note that, according to German alienists, the spirit which gave birth to the movement resulting in Germany's great advance in the care of the insane had its origin in the philosophy of Hume and Locke. The "philosophy of common sense" popularized in France by Voltaire, Diderot, Rousseau and others, and by these teachings the reformer Pinel was profoundly influenced. Nevertheless, as a French alienist has recently pointed out, the great reforms in the care of the insane, instituted in France, England and America, at the beginning of the century, have not been carried forward in these countries which, in this respect, have lagged far behind Germany. More than fifty years ago Comte* said: "There has been plentiful study of monomania, but it has been of little use for want of a due connection and comparison with the normal state. The works that have appeared on the subject have been more literary than scientific; those who have had the best opportunity for observation have been more engaged in governing their patients than in analyzing their cases; and the successors of Pinel have added nothing essential to the ameliorations introduced by him half a century ago in regard to the theory and treatment of mental alienation." Let me now ask your

* The Positive Philosophy of August Comte, Bohm's Philosophical Library, Vol. II, p. 133.

attention to a few considerations in reference to the second class of institutions—those which within the last decade or two have assumed the name of hospital. If one reads the annual reports of these institutions it will be noted that frequent reference is made to the fact that a neurologist, neuropathologist, or a pathologist has been added to the staff. In some instances investigations in physiological psychology have been attempted. It is not my purpose to belittle the services of those who have successfully advocated the necessity of these changes. Little permanent good, however, either in increased efficiency of the staff or in the discovery of new facts, relating to the causes of mental disease, can be expected until the organization of these institutions is so changed that the standards, by which the professional capabilities of the medical officers are gauged, are as high as those now required by the managers of our best general hospitals. To aid in the accomplishment of this end an advisory medical board, the members of which have had practical training as attending physicians to a general hospital, should be appointed. This advisory board would act in conjunction with the physician-in-chief and the trustees of the hospital, their services becoming all important by demonstrating clearly to the lay members the absolute necessity of distinguishing clearly in matters of organization between the institutions intended for the chronic, and those for the acute and consequently more hopeful cases of alienation.

The effective organization of a hospital for the insane, in which the medical care of the patients is as good as that afforded by our best general hospitals, depends upon the recognition, by the managers, of the importance of the following fundamental principles. (1) The reorganization of the institution must rest on a basis that shall make it possible for the medical officers to devote their time solely to the performance of their professional duties. (2) The best results in the treatment of patients suffering from acute mental disorders can be obtained in a hospital so organized, even without many of the accessions that are a necessary and integral part of the asylum. The huge grounds, farm, out-buildings, amusement pavilions, etc., all useful adjuncts in the treatment of chronic cases are either unnecessary, or of secondary importance, in connection with the work of the hospital. When patients have reached the stage, in which the therapeutic measures, made possible by the existence of such accessories are indicated, they are either well along in convalescence or have reached the chronic stage in their disease and are then better off in an asylum. I think a fair and impartial observer, who is thoroughly familiar with the organization and conduct of affairs in our best general hospitals, must admit that, while these institutions are admirably adapted to the treatment of patients, the same cannot be

said of our hospitals for the insane. In this second class of institutions admirable provision is often made for the care of convalescent patients, but there is a marked deficiency of the means, as well as methods, best adapted to the treatment of patients in the earlier and more acute stages of their disease. (3) The managers of these institutions, as they become more familiar with the conduct of affairs in our general hospitals, will doubtless realize that not only is the efficiency of the medical staff greater in those hospitals in which regular clinical teaching of student is practiced, but that under these conditions alone is it possible to bestow upon the individual patient the benefits to be derived from careful methodical study and observation of his case.

Unfortunate as are the existing conditions in the organization of our hospitals for the insane, physicians must remember that the laymen who are trustees of our institutions are not solely responsible for the present attempt to make bricks without straw. In the United States, and, so far as I know, in Great Britain, there is no opportunity presented for as careful bedside instruction in the study of mental diseases as there is in other departments of medicine. Where then can those who propose to become resident officers in our hospitals for the insane receive their training? Whence can the medical expert, whose opinion is frequently couched in terms of apodictical certitude, gather the facts which justify such an expression. Largely I fear only from his inner consciousness. Where can the family physician, who should have a practical knowledge of certain forms of mental disorder, get any clinical training in psychiatry? At the present time, nowhere.

Some of the beneficial results that would be sure to follow the reorganization of hospitals for the insane along the lines indicated may be summarized as follows: Physicians in general would naturally gain greater confidence in the efficiency of the medical staffs of these institutions; and, as a result, many patients would be referred to these hospitals for treatment, at a time when satisfactory results might be expected. The complete separation of the hospital from the asylum would clearly indicate that mental disorders are of essentially the same nature, and are amenable to treatment similar to that which is applicable to other bodily maladies. Not only would the highest class of men in the medical profession be attracted to become medical officers in these institutions; but they would also be given every opportunity to devote their talents to advancing our knowledge of the causes and best means of preventing the increase of insanity. Doubtless, a strictly modern hospital for the insane would become, in time, the recipient of donations which would render it possible for investigations, along scientific lines, to be prosecuted on a scale that would be productive of the best results

CLINICAL NOTES ON GYNECOLOGICAL CASES AT THE SAMARITAN HOSPITAL FOR WOMEN, MONTREAL.

By A. LAPHORN SMITH, M. D., Surgeon-in-Chief.

THE feeling is growing in the profession that the pendulum of medical education has swung a little too far in the direction of pathology, to the neglect of the study in nature's laboratory at the bedside. It may, therefore, interest your readers who are general practitioners to hear some remarks on the cases which came into this hospital during the month of February of this year, because they were just the average kind of cases which the family physician is constantly meeting with. The cases for January were the subject of a little paper which appeared in the August number of the *Canada Medical Record*.

The first case was Mrs. P., aet 48, who was sent in by Dr. S. F. Wilson, because he suspected cancer of the uterus. Dr. Wilson has had a large experience as a general practitioner and has been for several years my first assistant at this hospital and he has seen so many cases of cancer of the cervix sent in here too late for any operative treatment that he has become thoroughly imbued with the importance of recognizing the disease at the earliest possible moment and in losing no time in having it removed while it is still localized in the uterus. So that when this patient sent for him and stated that she was having hemorrhages every ten days to such an extent that her brain was beginning to suffer and that she had had the change of life some years before, he insisted upon making an examination at once. Although nothing could be felt on the cervix or uterus except that the latter was large, on this one clinical symptom of hemorrhage after the menopause alone, he urged removal of the uterus. I was strongly in favor of this course and vaginal hysterectomy was therefore done on the 6th February, clamps being used. These were removed in forty-eight hours, after which mild permanganate douches were given every day to prevent the unpleasant odor, care being taken not to introduce the syringe too far. She was up and around in ten days and went home in twenty-one days after her admission. On cutting open the uterus the hemorrhage was found to be coming from an angry looking ulcerated surface near the right uterine cornu the size of a quarter of a dollar. On further examination this was found to be cancer of the fundus. The patient has been seen recently and is doing her own housework and is in good health. I consider that her life has been saved by Dr. Wilson's prompt action, and I trust that his example will be followed in the hundreds of cases which are at present being diagnosed too late.

Mrs. D., 52 years of age, came to the Montreal Dispensary complaining of a purulent and offensive discharge from the vagina. She had her change of life eight years before and she had been attending her sister who had died of cancer of the breast and had ample opportunity of becoming infected, if the disease is contagious, as I believe it to be. On examination it proved to be primary cancer of the vagina but too far advanced to permit of any radical operation. The best I could do for her was to curette away the sloughing, necrosed part of it, and to apply a saturated solution of carbolic acid. She has been curetted once since then, but is now nearing the end.

Mrs. P., aet 27, was sent in on the 10th February by Dr. S. F. Wilson, for appendicitis, and although she was seven or eight weeks pregnant, I did not hesitate to operate rather than leave her in suffering and danger. It is my opinion that many deaths, from what is supposed to be puerperal septicaemia, are really due to an unrecognized appendicitis which suddenly bursts out with fulminating fury at the time of labour. There had been a history of pain in the right side since she was a girl: she had had one living child and two miscarriages before coming in. She was in such pain when she came in that we did not think it safe to spend a few days in preparation as we usually do, so she was carried to the bath and had a good scrubbing and was operated on next day. I found the ovary tube and appendix all adherent together, but was able to remove them without any difficulty. The left ovary and tube were not removed. I might mention that I never tie the appendix vermiformis en masse but cut it off even with the caecum and then close this hole as I would a bullet wound with two layers of silk stitches; one for the muscular layer and another for the peritoneum and when the latter are tied it is almost impossible to see where the appendix had been. She had a miscarriage three days later but otherwise made a splendid recovery; she has been seen frequently since and is absolutely cured of the pain which she had had in her right side for so many years.

Mrs. M., aged 49, was sent to me on the same day as last case by Dr. Maas for the single clinical sign of hemorrhages coming on several times a month, several years after the menopause. On examination I found a lacerated cervix pretty badly attacked with cancer. Two days later, which was the first day I had disengaged, I removed her uterus by the vagina without any difficulty, using clamps and every antiseptic precaution and the result has been excellent. She has been seen frequently since and appears to be in good health and spirits. A vaginal examination was made eight months later and there is no sign of recurrence.

Miss G., aet. 24, was sent in on the 12th February by Dr. McNamara for severe pain in the two ovarian regions ever since she was twelve years old when she first menstruated. I was loth to remove both ovaries from such a young girl and therefore five days later I removed one and a half ovaries but not the tubes, so that if she married she might have children. But I regret this conservative course, which I have been trying for a little over two years in all the young women. One of my principal objects was to prevent the premature menopause and it has not only done that but, I am sorry to say, many of these women are having menorrhagia so severe as to prevent them from keeping their situations, and on weighing the pros and cons I have almost come to the conclusion that it is better to remove both tubes and ovaries in these cases; the results have been more satisfactory on the whole in those in which I have done this; while those who do suffer from the hot flushes are pretty well over them in a year and after that enjoy good health. This patient although free from pain is worse in other ways, owing to the menorrhagia.

Mrs. F., aet. 31, a very stout woman weighing 240 lbs., was sent in by Dr. Smythe for repair of lacerated cervix which prevented her from taking any exercise and thus caused the obesity. She has not been seen lately but was doing her own work in a pretty large house when last heard from. The curing of reflex nervous symptoms following the repairing of a lacerated cervix is one of the surest as well as the most wonderful things in gynæcology.

Mrs. T. was sent in by Dr. S. F. Wilson in a rather alarming condition. She had had a miscarriage, for which she was carefully attended, but, notwithstanding, she developed a high temperature and all the symptoms of pelvic peritonitis. We would have preferred to open the abdomen and to remove one ovary and tube but at no time was she in a fit condition to bear a major operation. As she was having very fluctuating temperature and we could feel a mass projecting into the vagina we decided to open this under aseptic precautions and drain into the vagina. The result was remarkable. In five or six hours her temperature was normal and her pulse improved so much that in ten days she went out almost well. Although we warned her that we had not removed the diseased organ, which would probably have to be taken out later, she is in excellent health and perfectly free from pain.

Mrs. B., aet. 25., was sent in by myself for amputation of a badly ulcerated and lacerated cervix. It would have been impossible to do an Emmett in this case without waiting many weeks to get the inflammation reduced so that the lips could be brought together. And moreover, if I had done an Emmett she would probably have been lacerated again

at her next confinement. By my new method of amputating the cervix the uterus is left shorter and lighter and the first stage of the next confinement is exceedingly easy. I have seen none of the bad results mentioned in a recent article; on the contrary, in my cases this operation has left nothing to be desired. She made a good recovery.

Mrs. C., aet. 35, a widow, came in for curetting. She was losing ten or twelve days every month. She has not been seen since she left the hospital but we have heard that she has been married since, and that she is now in good health.

Mrs. B., aet. 38, was sent in by Dr. Smythe for a cauliflower mass of the cervix, completely filling the vagina. She had gone to the Metropolitan Dispensary for hemorrhages, which she was having every month, and the mass could be seen bulging out of the vulva. Although we considered her case hopeless, as far as ultimate cure was concerned, yet we thought that it would prolong her life to remove first the mass and then the whole uterus. The mass was first removed with the *écraseur*, then the uterus was covered with a gauze bag and the whole organ removed with clamps *per vaginam*. She was very much benefitted by the operation and could hardly believe that she was as bad as we thought. I told the doctors present, who asked how long I thought she would live, that I would give her five months. But she is alive after eight months and I have curetted the scar once since; but she cannot live much longer.

Mrs. M., aet. 40, was admitted on the 18th February by Dr. Field, who curetted her for a miscarriage.

Mrs. E., aet. 39, was admitted on the 22nd February for a very troublesome cystocele. She had already had an Alenande operation performed on her three months before and this was successful in keeping the uterus forward; at the same time she had dilatation, curetting, repair of a lacerated cervix, and an operation on the perineum all at the same sitting, and I had had great hopes that this would have cured the cystocele, which was causing frequent micturition. I therefore decided to do a Stoltz operation, which I have generally found very satisfactory; it consists in removing an oval piece from the anterior vaginal wall, which is then brought together with a silk worm gut purse string. She made a good recovery from this but had some other trouble which later necessitated the removal of the ovaries and tubes. She is now perfectly well.

Mrs. P., aet. 38, mother of seven children, was sent in by Dr. S. F. Wilson, on the 24th of February, for cancer of the right breast, the left one being unaffected. Two days later the breast was removed, including

the fascia covering the pectoralis major muscle and all the glands and fascia and cellular tissue in the axilla. She made a good recovery from this and three weeks later the cervix, which was lacerated and ulcerated, was amputated, which operation I prefer whenever there is much swelling or erosion. She went home two weeks later. With regard to the removal of the breast for cancer it is a pity that family physicians do not send these cases for operation earlier. Dr. Wilson sent her in within a few days of his first seeing her, but I have had many other cases which had been under observation for many months, thus allowing the precious moments to pass day after day and month after month until the time for successful operation had passed. Although every one from whom I have amputated the breast has recovered from the operation, even including those which were so advanced that I had to remove both pectoralis major and minor muscles, yet at the end of two years every one was dead from recurrence in whom I had done this very radical operation, notwithstanding that I had removed every apparent vestige of the disease. The only ones who are alive, and they are all alive and well, are those who were sent to me early, while there was only a lump in the breast, with or without retraction of the nipple. Every breast with a chronic swelling in it in a woman over thirty-five years old should be removed at once.

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STERILIZATION OF CAT GUT.

DR. E. C. DUDLEY, in his work on gynaecology, recommends the following method of preparing cat gut for ligatures and sutures. 1. The gut is tightly wound on sections of glass tube, and the ends are secured. This prevents contraction or thickening on boiling. 2. The fat and other soluble substances are removed by soaking for twelve hours in ether. 3. The gut is transferred to a 5 per cent. solution of formaldehyde and soaked in it for twenty-four hours. 4. The tubes are kept under constantly running water for twenty-four hours, to wash out the excess of formaldehyde. 5. Final sterilization is secured by boiling twenty minutes in water. The formaldehyde renders the gut brittle, but its tensile strength is restored by the boiling, which may be repeated one or more times without material injury to the gut. After boiling the gut may be preserved in absolute alcohol, or it may be boiled just before use. Gut prepared in this way will resist absorption for six weeks or longer.

THREE CASES PRESENTED BY DR JAMES STEWART BEFORE THE CANADIAN MEDICAL ASSOCIATION.

Reported by MALCOLM MACRAY, B.A., M.D.

DR. James Stewart conducted a clinic on the following cases at the Royal Victoria Hospital during the recent meeting of the Canadian Medical Association. The clinic was illustrated by lantern views, the majority of these being photographs of the patients taken at various stages of their illness.

The first patient shown, a coachman aet. 25, entered the Royal Victoria Hospital on March 4th 1902 complaining of headache, together with numbness and weakness of hands and feet. He had been healthy until February, 5th '02, when, after exposure to cold and wet, he began to be troubled with pains in the upper part of his chest before and behind, these pains were particularly severe in the cardiac region. The patient gradually improved, but about a fortnight later, after further exposure, the pains returned, accompanied by swellings about the size of a hen's egg, which appeared in front of his shoulders, quickly followed by similar swellings at the elbow joints and above the left trochanter. These nodules were not in themselves painful or tender and they soon vanished under the local application of iodine. On February 25th headache was first noticed, followed by pain in the back and tingling and weakness of the extremities. The weakness progressed rapidly and on admission the patient could walk with difficulty.

Inquiry into the family history brought out the fact that both his mother and sister died of pulmonary tuberculosis, while nine brothers died before the age of seven, of 'Inflammation of the brain' (the symptoms resembled those of meningitis). The personal history was negative on inquiry, although subsequent examination revealed a chancre on the penis and a rash on the back. The heart, lungs, glandular system, blood, and urine, were normal. Examination of the nervous system showed marked weakness of the muscles of the extremities, the flexors of the ankles being particularly weak. There was no wrist drop, and the flexors and extensors of the forearm appeared to be equally involved. Some inco-ordination was present in both extremities, but it was slight. The tongue was protruded normally, but the patient had difficulty in whistling and in closing the right eye. There was no involvement of the occipito-frontalis but there was some weakness of all the extensor muscles of the eye. Sensation to touch, pain, and temperature were all diminished in the extremities, and there were patches of anæsthesia on the face and chest. The muscles were very tender on pressure all over the body. The organic reflexes were normal, the deep reflexes were absent, while the superficial reflexes were present.

The condition of the patient became rapidly worse, and on March 9th he could not protrude his tongue beyond the teeth, could not close his eyes or whistle, and could not raise himself in the bed. On March 10th all movements were painful and performed with great difficulty and the patient was so weak that he could not raise his head from the bed, while the diaphragm showed signs of paralysis—the intercostals remaining unaffected. Tenderness of muscles, especially those of the face, was extreme, the slightest touch being painful. Later in the day dyspnoea became marked and the patient could not clear his throat of the mucus which accumulated. His face was utterly expressionless and he could not move a muscle. Next morning he appeared to be rather better and by March 14th he could breathe comfortably, although still unable to close his eyes, raise his upper lip, or wrinkle his forehead. From this time on he improved steadily and by April 4th was able to sit up in a chair. On April 18th he was discharged, feeling well and able to walk a considerable distance, although there was still slight tenderness of the muscles on deep pressure and the knee-jerks had not returned.

When presented before the society the man was in good health, and the reflexes had returned to their normal condition. The etiological factor was doubtless syphilis, and the improvement was rapid when mercurial inunctions were commenced.

The second case was that of a Hebrew merchant, aet 37, who was admitted to the hospital on Sept. 23rd 1901, complaining of pain in the back, weakness of extremities and paralysis of the lips. On Sept. 15th he was perfectly well and in fact was able to deliver a lecture, during the course of which he became intensely excited. On the following day he was exposed to the cold and wet, and on waking next morning noticed some numbness and weakness of the lower extremities. This weakness increased so rapidly that by the afternoon he was unable to walk.

By September 21st he had become so weak that he could not move a limb, or even turn in bed without assistance, his lips also were paralysed and he suffered such intense pain in the legs that he was unable to sleep. On admission nothing abnormal was found in the heart, lungs, glandular system, or blood, while special chemical and physiological tests of the urine by Dr. Bruere revealed nothing; however his mouth was very foul, the gums being ulcerated and teeth covered with sordes. His family and personal history proved to be good, with nothing indicating any toxic origin of the trouble. Further examination showed that he was unable to sit, stand, or walk, but could raise his legs a little off the bed. There was a marked facial paralysis, the patient being unable to show his teeth, close his eyes, or wrinkle his forehead, although he could partially protrude the tongue. There was no objective sensory

disturbance, but subjectively the patient complained of numbness of extremities and pain in the back, there was also slight tenderness of the muscles on deep pressure. The superficial and deep reflexes were absent, but no muscular wasting could be made out. By September 25th the patient's condition had become decidedly worse and he was unable to raise his feet off the bed, but from this date he improved steadily, and on September 29th he was able to close his eyes and wrinkle his forehead. On October 8th he had retention of urine and incontinence of feces, but apart from this was feeling much better, and by October 11th his strength had markedly improved, by this time also the organic reflexes had returned to their normal condition. By the end of October he was able to sit and stand, and with assistance walk a short distance, while his facial muscles were very much improved. The muscles of his extremities by this time showed distinct wasting and the deep reflexes had not returned. On December 4th he was discharged feeling strong and able to walk about perfectly well. In discussing these cases Dr. Stewart considered the first to be a multiple neuritis and the second an involvement of the anterior motor cells of the cord.

The third case was that of a man who has been under observation since December 1900, when he came to the hospital complaining of speechlessness which came on suddenly without warning.

There was a recurrence of attacks of a similar character every few days for a period of several weeks. Then severe headache and optic neuritis supervened and afterwards facial spasm, followed by paresis of the lower facial muscles on the right side, as well as weakness of the right half of the tongue. The mutism was no longer noticed its place being taken by a dysarthria, first of labials and later of all letters and words, and finally passing on to a complete anarthria. On opening the brain a tumor was found immediately beneath the grey matter of the lower part of the ascending frontal convolution. The removal of this was easily accomplished and was followed in the course of a few days by disappearance of the anarthria and the facio-lingual paralysis. The patient made a good recovery and was able to take part in active sports such as rowing and paddling the following summer. However in the spring of 1902 he returned, complaining of facia' spasm and occasional headache and weakness. A second operation was performed and another tumor removed from the same spot. Recovery was prompt and the wound healed perfectly, all the symptoms at once disappeared. When seen at the clinic the patient appeared to be in the best of health although he was again complaining of occasional twitching of the lower part of his face. Since then, however, the tumor returned and has again been removed by Dr. Bell.

THE DIAGNOSIS OF DISEASES OF THE GALL BLADDER AND BILE DUCTS.*

By ALEXANDER MCPHEDRAN, M.B.,

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THE bile ducts are but passages for the conveyance of bile from the liver cells to be cast out into the intestines, and the gall bladder is a diverticulum that acts as a temporary reservoir to receive the excess of bile when the discharge is less rapid than the secretion, as it probably often is in sleep and rest, at which time the flow lacks the stimulus of the active movements of the diaphragm and the abdominal muscles.

The outlet of the common bile duct into the intestine is considerably narrower than the calibre of the duct, and the pressure of the bile in the ducts is very low, a very slight impediment therefore suffices to interfere with its proper discharge and cause a damming back of the bile in the bile capillaries, when it begins at once to be absorbed by the lymphatics of the liver and is discharged into the blood by way of the thoracic duct. The flow of bile may be impeded, or wholly obstructed, (1) by inflammatory swelling of the lining membrane of the ducts; (2) by gall stones, or foreign bodies in the ducts; (3) by pressure from without by tumours, glands, etc. It is from obstruction that most of the symptoms of disease of the bile passages arise.

It is further more to be noted that the bile ducts, opening as they do into the small intestine, are peculiarly exposed to infection by the micro-organisms of the intestinal tract, especially the *bacillus coli communis*. As the bile may contain bacteria excreted from the blood direct infection may also take place, as occurs, for example, in typhoid fever, but the danger is much less than that of infection from the intestine. Not only the inflammatory affections of the biliary passages, but gall-stones also are due to bacterial infection. The infection causes some catarrhal inflammation of the gall bladder. Increased secretion of mucus results and this leads to a precipitation of calcium salts, cholesterine and bile pigment of which the stones are composed. Clumps of bacteria may constitute the nucleus of a stone. Further it is at least possible that malignant diseases are caused by infection. In the bile passages, with few, if any exceptions, the development of malignant disease is preceded by gall-stones, from which we can fairly infer that the irritation produced by gall-stones offers a favorable condition for malignant infection, if there be such, hence the much greater frequency of malignant disease of the gall-bladder than of the bile ducts.

*Read at the Canadian Medical Association Meeting at Montreal Sept. 1902.

The cardinal symptoms of disease of the bile passages are jaundice, pain, and fever.

Jaundice is the most common, as it is practically a constant symptom of the affections of the common bile duct.

As diseases of this duct always alter its calibre and therefore cause obstruction, it follows that jaundice must result. The converse is, I think, equally true, viz., that jaundice is always the consequence of obstruction of the common bile duct or its ramification in the liver. A non-obstructive jaundice is described in the books, and acute yellow atrophy among others is given as belonging to this class; but in this disease, as in others of a similar character, there is ample proof of obstruction of the bile canaliculi in the periphery of the hepatic lobules. It will certainly contribute to the definiteness of the pathological concept if jaundice signifies to us absorption of bile, and that its absorption always results from its flow through the bile ducts being somewhere obstructed.

Fever is a frequent symptom in all forms of disease of the gall bladder and bile ducts. It is caused by the absorption of toxic material from the inflamed or ulcerated mucous membrane. Its severity usually accords closely with the gravity of the cause. In catarrhal jaundice the fever, if present, is slight, lasting three or four days; here the infection is mild. In marked obstruction, especially from gall stones, there may be recurrent chills with high temperature, the temperature being normal in the interval—the so-called hepatic intermittent fever. Chills and fever are more common, however, in suppurative cholangitis, which is very often associated with a history of gall-stone obstruction. It may occur also in obstruction from tumor, especially in such as rapidly growing cancer implicating the ducts. In gall-stone colic, even in the absence of suppuration, the chills and fever may recur in distinct malarial-like paroxysms of great regularity. The suppurative cases can only be differentiated by the continuous fever, deeper jaundice, tenderness in the gall bladder area, rigidity of the overlying muscles, and the graver constitutional symptoms. If a decided increase of leucocytes is found on examining the blood the existence of a suppurative condition may be rendered certain.

Pain varies according to the cause; it is the earliest and may be the most distinctive symptom. It is referred to the upper right quadrant of the abdomen. In inflammatory conditions it is of varying intensity, but usually moderate, and always continuous and associated with tenderness. That due to passage of gall stones is sudden in onset in typical cases; it may be mild, but is usually severe, so severe it may be as to kill outright. It is paroxysmal, and, as in colics generally, pressure gives

some comfort. As soon as inflammation occurs in the gall bladder or ducts tenderness over this region and spasm of the overlying muscles occur, marked in proportion to the extension of the inflammation to the peritoneal covering; then there is also continuous pain. In neurotic patients, especially females, there may be marked tenderness over the gall bladder without the existence of inflammation. It is due to hyperaesthesia; there is usually no spasm of the muscles in such cases.

I. CHOLANGITIS AND CHOLECYSTITIS.

1. (a) *Acute Catarrhal Cholangitis*, or Catarrhal Jaundice, occurs usually in younger persons and is generally easily diagnosed. Jaundice in a young person, coming on without pain or apparent cause, except disturbed digestion, is most probably catarrhal. Absence of pain, of emaciation, and a negative examination, usually renders the diagnosis certain. If the condition lasts more than a week or two, the possibility of grave disease, as acute yellow atrophy, should not be overlooked. The general disturbance may be so mild that faint tinging of the conjunctiva is the first thing noticed; generally, however, the jaundice is preceded by symptoms of gastro-intestinal disturbance, as anorexia, nausea, furred tongue, foul breath, constipation, malaise, headache, &c. Ordinarily the cause is soon removed and the symptoms quickly disappear, and we surmise that the condition is due to catarrhal swelling of the mucous membrane of the bile passages with consequent impediment to the flow of bile, its absorption by the hepatic lymphatics, and mild jaundice.

Sometimes the obstruction is more decided and persistent, and the symptoms may continue for weeks. In such cases the liver may become enlarged, the general health impaired, with loss of flesh and strength, and the condition assume the general appearance of serious organic disease. Such cases may assume the appearance of the early stages of acute yellow atrophy, so that in children when the jaundice does not abate within a week, and still more, if it increases, a guarded prognosis should be given.

Gall-stone jaundice is easily excluded if the symptoms are definite—by the attacks of sudden pain and increasing jaundice with each attack of pain, the jaundice remitting in the interval; the history of preceding attacks of gall-stone colic; and often the associated paroxysmal hepatic fever. But gall stones may cause little pain and tenderness and be thus indistinguishable; in such cases the jaundice is, however, catarrhal. In malignant disease, in which the jaundice is always partly due to catarrhal swelling, the loss of flesh, cachexia, ascites, tumor, and nodules in the liver serve to distinguish the more grave lesion.

In cirrhosis the slight jaundice, more advanced age, previous history, and ascites, are usually sufficient to differentiate. Hypertrophic cirrhosis is distinguished by the large liver, the ascites, the more advanced age, and the chronic course.

(b) *Chronic Catarrhal Cholangitis* is rarely a sequel of the acute affection, but usually results from the continued irritation of some persistent cause, as gall stones, carcinoma, etc., implicating the bile ducts, or by pressure from without. The mucous exudate may be so inspissated as to cause attacks of colic which may be indistinguishable from those due to gall stones. There is, however, usually little, if any, increase of jaundice in such colic, as there is in colic from gall stones in the common duct. In these chronic cases the inflammation may extend through the duct wall and affect the peritoneal covering and adhesions to surrounding structures follow. Such adhesions may give rise to severe pains resembling colic: they are usually less distinctly paroxysmal, but tend to be more continuous with exacerbations like inflammatory pains.

2. *Suppurative Cholangitis and Cholecystitis*:—This is called *Infective Cholangitis*, but the term is not well chosen, as inflammation of the tract is always infective.

The results of infection depend rather on the degree of impediment to the flow of bile than on the inherent qualities of the infecting organism. The more complete the arrest of flow the more virulent is the infection likely to become. Normal bile is sterile, and organisms are not easily grown in it, not because of its antiseptic properties, but owing to its poverty as a nutrient medium. If there is a free flow of bile the organisms have little opportunity to grow and develop malignancy, but if the flow of bile is obstructed they flourish in the exudate that takes place from the diseased passages. Probably therefore all varieties of inflammation of the gall bladder and passages are but gradations of infection by such organisms as bacillus coli communis, streptococcus, staphylococcus, pneumococcus, and typhoid bacillus. Infection with little obstruction of bile flow usually produces catarrh; with complete stoppage, a septic cholangitis and cholecystitis, that may be so severe as to be gangrenous.

In the great majority of cases of suppurative inflammation there is a history of gall stones, and one or more of these are found impacted, or acting as "ball valves," in the ducts; other cases occur from infection by the organisms of such constitutional diseases as typhoid fever. In the mildest cases, in addition to the gall-stone colic with some intermittent jaundice, there are more or less marked chills and fever followed by

sweating. The regularity of the recurrence of chills may simulate malarial fever, but such regularity rarely lasts long.

If the obstruction is more marked, and therefore the infective organism more virulent, the symptoms become more grave. The chills, fever, and sweating are more decided, and the jaundice is more marked and persistent. Unless relieved a general condition of sepsis soon develops, the patient dying in a typhoid state.

If the disease has developed in the absence of gall stones, there will be little pain, but it is rare to find none present. The liver becomes regularly enlarged and somewhat tender. On account of extension of irritation to the peritoneum there is usually tenderness below the right costal margin. If the disease follows gall-stone colic which recurs from time to time the diagnosis may be easily made; in other cases a diagnosis is often impossible. Cases of pylephlebitis present a similar picture, and cannot be distinguished, unless a focus of infection of the portal system can be discovered. In both there is marked leucocytosis. The gall bladder is nearly always affected in cholangitis, though probably rarely secondarily to it, as the cystic duct is closed early. There is always distension of the gall bladder, and the inflammation extends to the surrounding peritoneum, hence there is always tenderness, and a pear-shaped tumor is usually palpable at the costal margin in the line from the tip of the ninth costal cartilage to a point one inch below the umbilicus. This is the usual seat of it, but not rarely it becomes much displaced especially if the gall bladder is greatly enlarged. It moves with respiration, and an incisure may be found between it and the liver. As inflammation affects the peritoneum the tenderness increases, and adhesions take place to surrounding structures so that the tumor becomes less definite, and the increasing spasm of the abdominal muscles interferes with examination. Pain is usually continuous; and fever moderate, although it may be absent. Fever is said to be more marked when there is ulceration of the mucous membrane of the gall bladder, and the pain more marked when there is no ulceration.

In the gangrenous or phlegmonous cases, as in all acute intra-abdominal diseases, the diagnosis is difficult in proportion to their severity. The more severe the symptoms the more they lose their localizing characteristics and the less likely are they to indicate even the section of the abdomen in which the disease occurs. The symptoms are those of peritonism, and are such as may arise from gangrenous inflammation of any abdominal organ, as gangrenous appendicitis for which they are most frequently mistaken. They simulate also strangulated bowel, gangrenous pancreatitis, perforation of the stomach or intestine, and acute intestinal

obstruction. A previous history of cholecystitis, of gall stones, or an infective fever, especially typhoid, indicate the gall bladder as the seat of disease and may enable us to make a diagnosis.

II. CHOLELITHIASIS.

Gall stones are said to occur in 20 per cent of all persons over 60, but to produce symptoms in only 5 per cent of those affected. The occurrence of symptoms depends, first on the situation of the stones, and, secondly, on the condition of the wall of the gall bladder and the surrounding tissues. So long as the stones lie in the gall bladder no symptoms arise directly from them; it is only as they block the ducts that they cause disturbance. Once the wall of the gall bladder and the tissues around it become inflamed, the occurrence of symptoms may be quite independent of the presence of stones.

Of those in whose gall bladders there are stones, in a large group there are no symptoms: in a smaller group, the symptoms are mild, consisting of slight disturbances in the region of the liver and stomach, such as may arise from gastric catarrh with hyperaesthesia, floating kidney, slight adhesion of the stomach, or a neurosis. The possibility of gall stones should not be forgotten in such cases. In the third and smallest group the symptoms are severe: they may or may not be characteristic.

In a typical case, the onset is sudden, it may be with such slight prodromata as chilliness, nausea and malaise. There is usually no apparent cause for the symptoms, though there may have been some error in diet. The pain may be sudden in onset and extreme from the first, or, begin mildly, and become slowly or rapidly severe. It is felt in the right upper quadrant of the abdomen, with some extension to the left. It radiates to the back, the right shoulder, and even down the abdomen and thigh. It may be so severe as to cause collapse. Usually it is somewhat paroxysmal, and terminates abruptly. Nausea and vomiting may be marked. Such is the description given of the pains of gall-stone colic. The description may locate the pains more definitely in the right upper quadrant, but, unfortunately, in many cases it is not so typically located.

The difficulties of diagnosis are well illustrated in the following cases.

In a lady whom I saw a few days ago there was a history of attacks of colic extending with intervals over 8 years. In the earlier years she said the pain always began in the lower zone of the abdomen, and gall stones were not suspected as the cause; in recent attacks the pain was rather diffuse, in the area between the ensiform cartilage and the

umbilicus. Her gall bladder now formed a freely movable pyriform tumor extending nearly to the umbilicus. There was persistent vomiting and marked prostration. There was no fever, yet leucocytosis was so decided that empyema of the gall bladder had doubtless occurred in this attack. Her general health was such as not to permit of operation, and she died two days later.

In another case, a lady of rather neurotic temperament, the pain begins at the costal margin, just at the ninth cartilage, but is greatest to the right of the spine between the eighth and twelfth ribs where there is much tenderness of the muscles with radiation of pressure-pain to the front, to the gall bladder region, if the pressure is made over the eighth or ninth ribs, and the appendix region if over the eleventh and twelfth ribs. There is marked tenderness in the region of the gall bladder, but no spasm of the overlying muscles. The tenderness is evidently due to hyperaesthesia and not to inflammation. The recurrences of pain are irregular, sudden in onset and cease suddenly, bear no apparent relationship to food, and are often accompanied by vomiting. There are no symptoms of gastric ulcer, or history to indicate perigastric adhesions. The gall bladder cannot be made out with certainty. The right kidney is slightly prolapsed so that the lower portion of it can be palpated. In such a case only a probable, or even a possible diagnosis of gall stones can be given. Some years ago Boas drew attention to tenderness to the right of the 12th dorsal vertebra as a sign of gall stones. The tenderness may persist long after the attack has subsided. In the foregoing case tenderness is more diffused and is nearly as marked on the opposite side.

Jaundice is usually said to occur in one-half the cases of gall stones, that is, we are to infer that in half the cases the stone passes into the common duct. My own experience places it much below that. Stones in the gall bladder and cystic duct cause no jaundice unless from extension of catarrhal inflammation to the common duct. It is probable that in considerably less than one-half the cases with a history of gall stones do any stones pass through the cystic into the common duct, so that in only a minority of cases will gall stones interfere with the flow of bile from the liver; it is only in the "successful" not in the "unsuccessful" attacks that jaundice occurs, (Riedal). If the stone does gain access to the common duct jaundice follows the attack of colic in one or more days after its escape from the cystic duct. Its amount and duration will depend on the degree and duration of the obstruction. As soon as the stone passes into the intestine and the obstruction is removed the bile flows freely again and the jaundice rapidly disappears. The stone

however may become impacted in the duct, or lodged in the ampulla just above its outlet. The obstruction will cause dilatation of the duct with distension especially around the stone; this allows the stone to float backwards and bile escapes, and the jaundice lessens until the stone again blocks the passage. The process is repeated and continues so long as the "ball-valve" action of the stone continues. With these recurrences of obstruction there may be repetitions of chill and fever. This variation in the jaundice is almost pathognomonic of gall stone obstruction, as jaundice, from other forms of obstructions usually remains unabated while the obstruction lasts. Gall-stone obstruction rarely gives rise to unvarying persistent jaundice unless the stone is lodged at the outlet of the duct into the intestine, a rare event. In gall-stone jaundice the liver is rarely much, if at all, enlarged, and the enlargement is much slower than in jaundice from carcinoma.

Fever of the intermittent hepatic type is not uncommon in the cholangitis associated with gall stones, and is of serious import in proportion to its severity and continuance. If with it, tenderness in the gall bladder area with spasm of overlying muscles, the development of a tumor in this region, and rapid increase in leucocytosis occur, there is little doubt of pus formation in connection with the gall-stone obstruction.

Tumor as a result of gall-stone obstruction is not common because of the inflammatory thickening of the wall of the gall bladder which usually precedes and accompanies the formation of the stone. If the changes in the gall bladder are but slight a plug in the cystic duct may cause great distension of it by mucoid fluid secreted from its wall. It forms a smooth pyriform tumor with its large end towards the umbilicus, freely movable at its lower end and fixed to the liver above and moving with it. If not too much distended and a number of stones are present, and if the abdominal wall is thin and relaxed, crepitus is sometimes obtained on manipulating the tumor. There are, however, a good many "ifs" to be provided for before this sign is obtainable. Such a tumor has to be differentiated from tumor of the pylorus, and of the head of the pancreas. If it is large and dislocated it may be difficult to distinguish from floating kidney, or from a cyst of the ovary.

Gall stones may be diagnosed with certainty in the following conditions:

(1) Recurrent attacks of colic at the right costal margin with or without jaundice, with nausea and vomiting, and tenderness in the gall bladder region. A history of such attacks especially at long intervals renders the diagnosis certain.

(2) Recurrence of jaundice of short duration ; of long duration if preceded by colic. In such conditions the jaundice is usually variable. Previous attacks of jaundice with gall stones in the faeces are of course conclusive.

(3) Attacks of colic followed by jaundice a few days later.

Several conditions produce symptoms similar to those of gall stones. In many cases of gastralgia the pain is sudden in onset and severe and is occasionally accompanied by nausea and vomiting. Such attacks may be due to a variety of causes, such as gastric or duodenal ulcer, hyperacidity in cases of gastric hyperaesthesia, and adhesions of the stomach to the gall bladder or bile ducts. In the last class with the attacks there may be jaundice, and thus simulate a gall-stone attack very completely. A history of gastric ulceration or of gall stones would be of great value in such circumstances. The attacks in such perigastric adhesions usually persist longer than gall-stone colic, and recur for years without material injury to health. They usually resemble gastric ulceration with hyperacidity more than gall-stone colic. The pain of neurosis, especially in neurotic women, may give much difficulty. The second case already described is one in point. In that woman there is the pain of neurosis, but that there is not also pain from all gall-stone irritation of the cystic duct is quite uncertain. The gastric crises of *tabes dorsalis* may cause difficulty, especially if they occur before the other symptoms become manifest.

By way of conclusion I may say that in typical cases of gall stones, as of all diseases of the gall bladder and bile ducts, the diagnosis may be present no difficulty, but in the atypical—and they form the great majority—more than a probable diagnosis is impossible. Inflammation may simulate stone ; and stone, inflammation. Tumor may simulate both. One often masks the characters of the others.

A positive diagnosis being impossible, it only remains to be armed with a full appreciation of the difficulties to be met and of the conditions that may lead astray.

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THE MEDICAL TREATMENT OF DISEASES OF THE BILIARY PASSAGES AND GALL BLADDER.

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I HAVE been requested to say a few words to open that part of this discussion dealing with the medical treatment of diseases of the biliary passages and the gall bladder. Diffuse suppurative inflammations and stenosis, and obstruction of any one of the ducts of a mechanical character, are admitted by all to demand immediate surgical intervention and, therefore, call for no remarks from me this morning. My observations will be limited to the treatment of the so-called catarrhal inflammations of the bile passages and gall bladder, and to the prophylaxis and early medical treatment of cholelithiasis.

Until recently, the treatment of these affections has confessedly been very empirical, and the results obtained have been uncertain and disappointing. Many advances, however, have been made, during the past few years, in our knowledge both of the physiology and the pathology of these organs. Recent carefully conducted experimental investigations carried out in animals with artificial, and in men with accidental biliary fistulae, have enabled us to appreciate the various influences which modify and alter the secretion of bile, and interfere with its passage from the liver cell through the minuter bile ducts to its exit into the intestinal tract. By this same method of investigation also we have been enabled to clear away much of the ignorance and confusion which has existed in reference to the action of drugs on this secretion. These advances in our knowledge may assist us in prescribing a more rational, and, therefore, more successful therapeutics.

Rational therapeutics must always be based upon a knowledge, as exact as possible, of the underlying pathology. Pathologists, however, have as yet spoken in a very hesitating way as to the morbid conditions present in jaundice not due to a demonstrable obstruction. The opinions of Hunter (1) carry much weight, although as yet post-mortem evidence of catarrhal inflammation of the ducts is very scanty. Our present views may be epitomized as follows:—The liver, situated as it is on the most important vessel of the portal circulation, besides performing its important offices in regard to metabolism, acts as an important excretory organ much in the same way as the kidneys do in the general circulation; and in doing so it protects the system against the entrance of toxic drugs and the crude and irritating products of faulty digestion. The products of

normal digestion carried to the liver and excreted in the bile are non-irritant. It is otherwise in certain disorders of the gastro-intestinal tract associated with the formation of irritating toxins, which toxins, when absorbed into the portal system, are arrested and excreted by the liver cells into the bile, altering its non-irritant character. If this bile were poured directly into the intestines, little or no disturbance might arise, but, instead of this, it is passed at a very low pressure along a system of minute canals lined with epithelium, which is itself excretory. This epithelium under normal conditions appears to secrete a considerable quantity of watery fluid into the bile, rendering its consistency thin and its flow easy. Under the influence, however, of irritating properties in the bile the secretion of this lining epithelium is increased in quantity, and becomes mucous and viscid in character, thus checking the onward flow of the bile, and in the more severe cases, producing such a rise of pressure in the ducts as to lead to some re-absorption by the lymphatics.

The results obtained by Stadelmann (2) in his experiments with toluyl endiamin afford us a curious illustration of this condition in an extreme degree. When this drug was administered to dogs, it promptly produced an attack of jaundice, which could be attributed only to the marked increase in the viscosity of the bile, resulting not from changes in the bile as secreted by the liver cells, but from a greatly increased secretion of mucus by the walls of the bile ducts. This increase of viscosity, associated with an inflammatory swelling of the epithelial lining of the ducts, brought about a stasis in the bile current leading to re-absorption of the bile through the lymphatics into the general circulation, and thus gave rise to these symptoms of icterus. The jaundice in this case had nothing to do with the duodenum, for it occurred even when the common bile duct had been ligatured and a biliary fistula established.

Fortunately few toxins or drugs possess properties so irritating to the mucous membrane of the bile ducts as this toluyl endiamin, but Hunter (3) considers the icterus of epidemic jaundice, of febrile jaundice, of the jaundice of Weil's disease, of acute yellow atrophy, of the various specific fevers, such as yellow, relapsing, and malarial, and of pyæmia, to be of a similar nature.

He is also of the opinion that some retardation of the flow of the bile, associated with a slight degree of catarrh of the bile ducts, frequently underlies the ailments included under the terms lithæmia, and popularly attributed to "biliousness" and a "torpid liver"—ailments not infrequently accompanied by more or less tinging of the conjunctiva.

It is easy, on this supposition, to understand the good results often resulting from the employment of the so-called hepatic stimulants, such as mercury, podophyllin, and rhubarb, which, as we now know, have little direct action on the liver cells, but a very distinct action on the gastro-intestinal mucosa.

Closely associated with any retardation in the on-flow of the bile in the ducts is another important factor in the production of disease in these passages, namely, the infection of the bile by micro-organisms. In health the bile is sterile. Attempts to prove that it is not so have not been confirmed, though the old idea that it possesses marked antiseptic properties has been overthrown, and investigators have shown that many forms of micro organisms may grow luxuriantly in it under certain conditions.

Infection by bacteria may take place in two ways. We may have an ascending infection through the biliary passage from the duodenum. In this case an infection is possible from either the bacillus coli or the streptococcus, as these bacteria are frequently present both in the duodenum and in the lower end of the ductus choledochus. We may also have an infection through the portal circulation; bacteria absorbed from the intestine may pass in the blood through the portal vein, be eliminated by the liver, and pass into the bile. Fütterer (4) has demonstrated that typhoid bacilli may readily pass in this way into the gall bladder. Fraenkel and Krause (5) have shown that the bile is a much frequented habitat of the typhoid bacillus and cultures, made from bile in the gall bladder in 30 autopsies of patients dying of typhoid fever, showed the bacillus typhosus in 21. Chiari (6) found the typhoid bacillus in 19 out of 22 cases of typhoid fever, and Osler (7) states that Flexner found them in 7 out of 14 cases, but in no case was there any clinical or pathological evidence of an inflammatory reaction in the gall bladder. To permit an active infection, some stagnation in the bile current appears to be necessary.

Naunyn's experiments demonstrated that only after ligature of the common duct will an injection into the hepatic duct of a culture of the bacillus coli be followed by inflammation. Peterson, (8) referring to cases of cholelithiasis occurring in Czerny's Klinik, says, "after the operation the bile which escaped in the fistulous opening was examined from time to time, and it was found that the bacteria diminished rapidly as the bile continued to flow, and were often found to have disappeared at the end of eight days, almost always after three to four weeks." In one experiment Cushing (9) found that the typhoid bacilli, introduced directly into the gall bladder of the dog, disappeared in 24 hours with the free

flow of bile. Many other experiments that I could mention indicate conclusively that, without stagnation in the onflow of the bile, an active infection does not take place.

Still further, a retardation in the onflow of the bile, associated with a catarrhal condition of the bile ducts, and a consequent increased secretion of mucus and exfoliation of epithelial cells, undoubtedly plays a very important, if not the most important, part in the formation of gall stones. The majority of gall stones, as we know, are formed chiefly of cholesterin, having a nucleus either of clumped bacteria, or of bilirubin calcium. Cholesterin has been regarded as a normal constituent of bile, in which it is held in solution by the bile salts and by the small quantity of fats and soap present in bile, but it appears to be very doubtful whether it is actually formed in the liver cells. Experiments carried out in Naunyn's laboratory would indicate that there is no separation whatever of cholesterin from the blood by the liver cell, and that the amount found in the bile is in no way dependent upon the quantity or character of the food taken. Naunyn (10) considers that only a very small amount, if any, of the cholesterin in the bile is formed by the liver cells, but that a much larger amount is derived from the epithelium of the biliary passages and is a product of the disintegration of their protoplasm. He adds that whatever view may be taken of the source of the cholesterin of the bile in health, there can be little doubt that the biliary passages are its source in disease. What, then, are the conditions leading to its formation in increased quantities and to its precipitation? Statistics show that gall stones are extremely uncommon in young persons under 30, and are most frequently met with over 60. They are three to four times more common in women than in men; they are also much more frequent in those who suffer from conditions favouring retardation of the bile current. Such conditions exist in those who lead an inactive life, in persons suffering from mitral stenosis, and in those in whom the movements of the abdominal and respiratory muscles are hampered by tight lacing, obesity, pregnancy, or abdominal tumor. Stasis in the onflow of bile in the ducts, therefore, appears to be an important etiological factor in the formation of gall stones. How does this stasis lead to cholelithiasis? Frerichs taught that under conditions of stasis changes took place in the bile, its reaction became acid, the bile salts were decomposed, and the cholesterin was precipitated. Naunyn, (11) however, questions this explanation, and, as the result of his investigations, regards the infection of the bile by micro organisms as the efficient cause of the increased secretion from the epithelium of the bile passages. When stagnation occurs from any cause, a bacterial infection is favoured. Should

such infection take place, a catarrhal cholangitis and cholecystitis are set up : cholesterin is formed in an abnormal amount, which is afterwards readily deposited on any suitable nucleus, either a minute bilirubin calcium calculus, or a clump of typhoid or colon bacilli. Still it is to be remembered that stasis is the important underlying factor permitting such infection, for with a free flow of bile we know that bacterial infection tends to disappear rapidly.

Stasis is also an important factor in the formation of the bilirubin calculi. Pure bilirubin is never precipitated (Hunter), but under certain conditions it combines with calcium and is then precipitated as an insoluble compound constituting the gritty particles sometimes met with in the intra-hepatic ducts, which may grow to form small calculi, or may form the nucleus of a cholesterin gall stone. Bilirubin and calcium are both normal constituents of the bile, but under ordinary circumstances never combine to form this insoluble compound, even when lime is added directly to the bile in considerable excess ; the combination being prevented by the presence of the bile salts. Naunyn found, however, that the addition of a small amount of egg albumin to the bile at once brought about a precipitation of this insoluble salt. He, therefore, considers it highly probable that the albuminous material derived from the desquamation and disintegration of the epithelium of the bile passages in catarrhal conditions is the chief determining cause of the precipitation of these small concretions. This catarrhal condition is dependent to a great extent on stasis in the bile current, associated with either a bacterial infection or the excretion of irritating toxins in the bile, so that again we have stasis as the important etiological factor to be considered in our therapeutics.

Recognizing, therefore, the importance, in the etiology of the diseases which we are now considering, of any retardation in the on-flow of the bile in its ducts, let us briefly enquire into the means at our disposal for modifying the amount and character of this secretion, and for favouring its passage through the small ducts till its exit into the intestine.

Placed, as the liver is, upon an efferent vessel of the alimentary canal, its vascular condition must vary with the varying conditions of the gastro-intestinal tract. The mere taking of food in itself produces an increased secretion, which becomes marked within an hour and greatly increased after four or five hours have elapsed. Heidenhain (11) has also shown that in dogs, section of the splanchnic nerve, by producing a general dilatation of the portal vessels, causes a marked increase in the flow of bile, while stimulation of that nerve, by inducing a contraction of the same vessels, diminishes the secretion of bile.

Our knowledge is still defective as to the exact influence on this secretion of the various constituents of the food. Fats appear to have a marked effect in increasing the amount of bile secreted and also the amount of fat excreted in the bile. Rosenberg (12) has shown that the influence of the fats in stimulating the secretion of bile is much more distinct than that of either proteids or carbohydrates. Barbara (13) in a recent paper has stated that the excretion of bile, after a meal of proteids or carbohydrates, runs parallel with the excretion of urea, while after a meal of fats, bile secretion increases out of proportion to the urea; and Albu (14) says that in a woman with biliary fistula he found that a diet consisting of eggs, soups, white meat, vegetables, and fruit, caused a more abundant outflow than one in which meat figured largely.

The secretion of bile is also influenced by the amount of fluid taken, but there is no mechanical filtration such as exists in the kidneys, as the bile is excreted at a pressure several times higher than in the portal vein. The amount of water excreted is, therefore, dependent on the activity of the liver cells and not on the water in the blood. At the same time, it has been observed that in the case of a woman with a biliary fistula, the amount of bile excreted was greater upon the days on which a large amount of fluid was taken, and that this increase was in the quantity of the water and not of the biliary salts.

The determination of the influence of drugs on the biliary secretion has been beset with many difficulties; and even in the case of the few which apparently stimulate this secretion, it is difficult to be sure of the exact part played by the liver cell itself and by the expelling apparatus, and of the effect produced by the action of tissues outside the liver, such as the intestinal glands and mucosa. Careful experiments, however, have been recently made in cases of accidental biliary fistulae, and the effect of drugs carefully observed.

The more important drugs which have been found to increase the flow of bile are: turpentine, salol, sodium salicylate, sodium benzoate, and euonymin, but no drugs stimulate the flow so powerfully as do the bile salts, the glycocholate and taurocholate of soda. The action of sodium bicarbonate, sodium chloride, sodium sulphate, Karlsbad salts, aloes, rhubarb, and ipecac, is so slight as almost to amount to nil; while calomel, strychnine, and potassium iodide rather diminish the flow.

A recent investigator has questioned the existence of any drugs directly influencing biliary secretion. But this, I think, is carrying scepticism too far; we know that the bile salts will stimulate the flow; similarly, but to a less extent, that sodium salicylate will increase the flow, and Rosenberg claims a direct cholagogic action for olive oil, which, in his

hands, next to the bile salts, was the most efficient stimulant of the biliary secretion.

It is also to be noted that not only is the onflow of the bile in its passages influenced by the activity and the character of the secretion, but also by the vigour of the peristaltic action of the muscular coat of the ducts, and by the pressure made directly on the liver and gall bladder by the movements of adjacent organs, notably by the excursions of the diaphragm and by the contraction of many of the abdominal muscles. Experiments have demonstrated that the flow of the bile is much accelerated by vigorous and deep respiratory movements, a very marked increase in the amount of bile poured out takes place after waking and rising in the morning.

Having thus, very imperfectly I feel, reviewed the pathological and physiological facts with which we have to deal, let me briefly suggest a few broad lines of treatment.

In all affections of the biliary passages, it is of the first importance that the blood carried to the liver cells by the portal vein should contain no irritating drug or toxin which, after its secretion in the bile, may have a tendency to maintain or increase irritation of the mucous lining of the ducts. To this end the dietary must be supervised and made to conform to the digestive capacities of the patient. No hard and fast lines can be laid down, but each individual must be carefully considered as regards his habit of body, his capacity for the digestion of the different articles of food, the amount of exercise he is able to take, and the nature of his work. An all important point is that the diet list should be a simple one; simplicity means facility of digestion. It is of the utmost importance to secure and maintain a healthy condition of the gastro-intestinal mucous membrane. To this end the occasional employment of a gastro-intestinal alterative and laxative, such as mercury, euonymin, podophyllin, or rhubarb, followed by an alkaline mineral water, will, I think, be of much service. For many reasons constipation should not be permitted. In Europe the waters of Sprudel Springs in Karlsbad are highly esteemed. They are alkaline, laxative, and have a temperature of 110-115° F. At the same time it appears to me desirable that except in conditions of actual blocking of the ducts, the free secretion of a normal watery bile is to be encouraged. To favour this, the meals should be regular, and at not too long intervals, and the daily dietary should contain as large an amount of fat as can be taken without disturbing digestion. Fat, more than any other element of the diet, stimulates the secretion of the bile, while at the same time acts as an efficient intestinal antiseptic. The free use of a pure water between meals should also be encouraged. The great majority of persons, suffering from affections of the biliary

passages, will be found to take an insufficient amount of water to drink. Luff (15) states that this insufficient consumption of fluid is especially frequent in women, and attributes the fact to the erroneous and absurd belief that a diminution in the amount of fluid taken tends to keep down the body weight and to prevent the occurrence of obesity. In the prevention as well as the treatment of these disorders, the free consumption of water, apart from the meals, is most desirable.

It is also of importance to develop and maintain a free and full action of the diaphragm and the associated abdominal muscles. All forms of clothing which tend to impede the action of these muscles or unduly press upon and tilt downwards the fundus of the gall bladder, must be discarded, and regular systematic exercises, involving these muscles chiefly, should be taken.

And lastly, the question arises, what can we effect by the administration of drugs? No drug that we know of has so powerful a stimulant action on the liver cell as its own bile salts, the glyco-cholate and taurocholate of soda, and in suitable cases, where the passages are not absolutely blocked, these may be administered in the form of ox-gall. The objection to the use of this drug, however, is that it contains not only the bile salts but the bile pigment, and in those cases where the system is already suffering from more or less re-absorption of these pigments, it is inadvisable to burden it still further by the exhibition of ox-gall. And here let me say that a sharp distinction must be made between these two constituents of the bile. Bile pigments are entirely of an excretory character. They are waste material, and according to Bouchard, they are toxic, and are not intended for re-absorption. It is quite different with the bile salts, of which four-fifths of the amount secreted by the liver cells are re-absorbed into the circulation and appear to subserve a useful purpose in the economy. Some purer preparation, therefore, of cholalic acid than ox-gall would appear to be a desirable addition to our materia medica.

In the slighter catarrhal conditions, sodium salicylate and sodium benzoate both appear to be capable of rendering us some assistance, and as they are excreted in the bile, will doubtless assist in maintaining its sterility. They should be employed in doses of from 60 to 80 grains daily.

In the treatment of cholelithiasis, although the administration of olive oil has by no means fulfilled the expectations of those who first recommended it, yet I still think that in certain conditions, it will afford us distinct assistance. The large doses originally recommended in the treatment of cholelithiasis are apt to disturb, and may in that way do harm, but in gradually increasing doses from 2 to 6 ounces per diem, it

will stimulate the secretion of bile, rendering it more fluid, and by increasing the amount of fat excreted in the bile, will increase considerably its power of holding the cholesterin in solution.

During the actual attack, sedative and anodyne measures are called for. We have no anodyne so effectual as the hypodermatic employment of morphine, or of morphine and atropine, and the application of local heat. At the same time, the free employment of an alkaline mineral water, such as Vichy, is to be commended, and this, I think, has a distinctly better effect if drunk as warm as may be convenient.

When the acuteness of the attack has passed, what measures are to be adopted? Are we, as physicians, at once to recommend operation? I think not. Naunyn (16) says cholelithiasis is a disease which becomes dangerous through cholecystitis and cholangitis and their consequences, through chronic icterus, and through carcinoma. Kehr (17) states, of a probable 2,000,000 Germans who have gall stones, only 100,000 complain of their trouble; with the remainder, the disease is in a latent condition; and again, "Latest cholelithiasis is now to be regarded on the whole as a rather harmless affection." The great success which often attends a "Karlsbad cure" is attested by all, and to those who can afford the time and the money I should be inclined to give the option "of the regular life, the beneficial, pain-assuaging, laxative action of the Karlsbad Springs, the delightful influence of the Sprudel baths, with their peat poultices to the liver and region of the gall bladder. There the beautiful surroundings entice the cure-guest into the noble forest; he climbs the mountains, which in stillness leave nothing to be wished for, and he forgets the worry of his business and the pain of his disease. The cuisine permitted by the cure removes the sins of his club-life at home, and of the many strawberry and peach punches; whoever is not very sick must in a short time feel himself well." Such may well be the treatment of cholelithiasis for the prosperous classes.

In cases, however, of repeated unsuccessful attacks, as Riedel calls attacks without the passage of stones, and in cases of prolonged impaction, unquestionably an operation by the surgeon is demanded. But even after the operation, the careful dietary, the free use of water, and a regular amount of daily exercise, are demanded to maintain freedom in the future from recurrence. The surgeon no more than the physician can promise an absolute cure.

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ROBERT BURNS' LAST ILLNESS.

EARLY in the month of January, 1796, when his health was in the course of improvement, Burns suffered a severe chill. Following this he had an attack of rheumatic fever. On 31st January he wrote to Mrs. Dunlop that "I became myself the victim of a severe rheumatic fever and long the die spun doubtful; until, after many weeks of a sick-bed, it seems to have turned up life, and I am beginning to crawl across my room, and once indeed have been before my own door in the street." As from time to time he appeared on the street during the early months of 1796, his old acquaintances were struck by the appearance of Burns, whom a second look showed to be dying. April and May brought little improvement, as he spent his time in his room, often confined to bed. On July 4th, he went to Brow on the Solway shore to try sea-bathing. He wrote Mrs. Johnston. "This protracting, slow-consuming illness will, I doubt much, my very dear friend, arrest my sun before he has reached his middle career." On the 14th July, he said to Miss Craïg, whose home he visited, and who offered to shut the window blinds, thinking the sunlight might be too much for Burns, "Thank you, my dear, for your kind attention; but oh! let him shine; he will not shine long for me." He returned home on 18th July. During the next four days his mind wandered a great deal; and when not roused by conversation there was delirium. The end came, July 21st, while he was pillowed up in bed in the semi-erect position. Here there is the picture of a man dying of gradual heart failure, as the result of his rheumatism.

NOTES ON MASTOID OPERATIONS.*

By A. B. OSBORNE, M. D.,

Oculist and Aurist, Hamilton City Hospital.

THE following six successive cases of radical operations upon the mastoid, done during the months of April, May, and June of this year, are cited to show the varying symptoms existing before the operation and the different conditions found at the time of operation. The operation is now so familiar that no reference to it is necessary. I would simply state that these operations were done with mallet, chisels, and gouges.

1. C—M—. Age 3. Symptoms before operation. Swelling and tenderness over the right mastoid, restlessness and fever, no discharge from the ear, drumhead normal.

Operation. 15th April, 1902. Pus was found beneath the periosteum and upon opening the bone the antrum was found full of pus, which also extended to some of the adjacent air cells, but did not involve the attic. Complete removal of the diseased parts resulted in recovery with perfect hearing.

2. N.—S—. Age 13. Symptoms before operation. Persistent offensive discharge from right ear, fever more marked at night, tenderness over mastoid. Old cicatrix over mastoid from previous operation, drumhead entirely destroyed.

Operation. 2nd May. Antrum and many air cells filled with pus. In attempting a thorough removal of all the diseased bone, the facial nerve was accidentally divided, leaving permanent facial paralysis on the right side.

3. Miss M—. Age 22. Symptoms before operation. Chronic offensive discharge from the left ear, drumhead almost entirely absent, swelling and tenderness over mastoid, the swelling extending some distance back, intermittent fever.

Operation. 18th May. The area involved was so great that an incision two inches long was made at right angles to the original one. The attic, antrum, and many large cells were found full of pus; the roof of the attic was eroded through, exposing the dura, covered with granulation tissue, the lateral sinus was also widely exposed; pus had extended behind the antrum, between the diploe of the skull, for the distance of an inch, where the inner plate was extensively eroded and a large abscess existed lying upon the dura which was covered with granulations. The outer plate was so eaten away that when the periosteum was removed a blunt probe readily perforated the bone.

* Read at the Canadian Medical Association, 17th September.

4. L—S—. Age 16. Symptoms before operation. Chronic discharge from left ear, tenderness over the mastoid, large perforation of the drumhead, occasional high fever, acute pain radiating from the mastoid.

Operation. 30th May. Large bone abscess extending to the dura of the middle fossa and the lateral sinus, extending also to the tip of the mastoid.

5. Mrs. C—. Age 47. Symptoms before operation: Chronic discharge from left ear, slight swelling over the mastoid, with tenderness, drumhead almost entirely absent, giddiness and excruciating pain radiating from the mastoid.

Operation. June 14th. Extensive bone abscess, the contents of which, when opened into with the chisel, almost spurted out. The bone was eroded exposing the dura of the middle fossa and also exposing the lateral sinus. The pain ceased immediately after the operation.

6. Mrs. G—. Age 36. Chronic offensive discharge from right ear, prolonged treatment has had no effect; slight tenderness over the mastoid. The discharge has been accompanied by blood lately which has prompted her to undergo the operation.

Operation. July 21st. After chiselling a short distance there was considerable oozing of blood from the bone opening. This oozing occurred several times until the bone opening was sufficiently large to remove a sequestrum about the size of a bean. The surface of the sequestrum had sharp jagged points and it was in immediate contact with the lateral sinus. The source of the hemorrhage, both before and during the operation, must have been the lateral sinus caused by the sequestrum, as all hemorrhage ceased with its removal.

In the first of this series there was a mastoid abscess without involvement of the middle ear. The small bones and the drumhead were left intact and recovery took place with unimpaired hearing. In the second case I had the misfortune—the only time in my operating experience—to divide the facial nerve. In extenuation I may say that most of the landmarks had been obliterated by a previous unsuccessful operator.

In the third case, in addition to the mastoid abscess, there was a large extra dural abscess about $1\frac{1}{2}$ inch obliquely upward and backward from the external auditory canal. The dura was covered with unhealthy granulations, and the bone over the abscess was so diseased that a dull probe easily penetrated it. The passage connecting the abscesses was very small and difficult to trace.

In the fourth and fifth cases, there was exquisite pain. In each of these cases, when the chisel penetrated the pus cavity, the pus almost

squirted out, showing that it had been retained under pressure. In each, the pain was immediately relieved by the operation.

The sixth case came for operation because of occasional oozing of blood from the ear in addition to purulent discharge. The rough points of the sequestrum, being in direct contact with the lateral sinus, appeared to have been the cause of the hemorrhage.

In each of these cases, except the first, the lateral sinus was laid bare. In the third, fourth, and fifth the dura was laid bare.

It would appear that suppurative disease extends more readily through the bone of the skull than through the dura, and the protection of the brain, from infective processes, depends much more upon the thick, tough, fibrous dura than upon the bone.

In my experience, it is of the greatest importance that the operator should dress all mastoid operations personally until the healing is completed.

In closing, I will refer to two cases having many if not all the symptoms of deep seated mastoid disease, but which upon operation proved to be entirely superficial. The first, a child aged 6, had a purulent offensive discharge from the right ear, the auditory canal so swelled that the drumhead could not be seen, swelling with pain on pressure over the mastoid, constant fever worse at night, occasional delirium. When examined upon the operating table, an abscess was found pointing upon the posterior wall of the auditory canal, and, upon a free incision being made at this point, a large quantity of pus escaped and the boy made a rapid recovery. Later examination showed the drumhead to be normal.

The second case, a trained nurse, came to me because of a chronic discharge from the left ear; the external auditory canal was so swollen and tender that the drumhead could not be seen. There was œdema and tenderness over the mastoid, together with some fever. Upon making an incision for a mastoid operation, an abscess was found about an inch in length lying external to the periosteum and communicating with the auditory canal. To make sure that there was no deeper disease, the periosteum was raised and the bone found perfectly healthy. The abscess healed kindly and the drumhead when seen subsequently was found to be normal.

Each of the radical mastoid operations made an uninterrupted recovery with complete relief of all symptoms.

CURRENT MEDICAL LITERATURE.

Conducted by A. J. MacKENZIE, B.A., M.B.

FATAL ACETONAEMIA FOLLOWING AN OPERATION FOR ACUTE APPENDICITIS.

IN the "Annals of Surgery" for October, a paper is reproduced, read before the American Surgical Association in June, by Dr. Brewer of New York in which an account is given of a case of acetonaemia following an operation for appendicitis

The patient was a boy aged 12, history negative, previous health good; operation about the sixth day of the attack, a perforated gangrenous appendix was removed under chloroform anaesthesia lasting 25 minutes. The progress of the case was satisfactory and all indications good until the third night, when he awoke with a piercing shriek, and continued screaming for a few seconds, failing to recognize those about him; then fell asleep till morning when he was distinctly somnolent, but when aroused would cry out as if frightened. The general condition was good, though the urine showed traces of albumen, and granular and hyaline casts. The paroxysms continued throughout the day with intervening deep sleep. There were no signs of cranial palsy or meningeal irritation, and no bodily disturbance. About this time the sweetish odor of the breath gave the first clue to the condition and on analysis large quantities of acetone and diacetic acid were found in the urine and blood. Believing that the symptoms were due to an acute auto-intoxication, diuresis, catharsis and intravenous injection of a solution of bicarbonate of soda were resorted to but without avail, the periods of excitement became infrequent, the sleep more profound, and the patient died the next morning.

In seeking an explanation, sepsis, traumatism, drug intoxication can all be excluded: auto-intoxication is the only tenable explanation and of this, ptomainic poisoning and uraemia, may be excluded by the history and conditions, acetonaemia remains. The term is misleading as acetone itself is harmless while later investigation throws doubt on the theory which gave "acidosis," from accompanying "oxybutyric" and "diacetic" acids as the cause of a direct toxæmia. The presence of these acids reduces the alkalinity of the blood, on which depends its power of absorbing carbon-dioxide, and hence we have a poisoning by carbon dioxide.

The characteristic symptoms are three : a sweetish, ethereal odor of the breath, delirium, and a rapidly fatal coma. Though usually associated with diabetes it may occur independently of it in a variety of conditions *e. g.* infectious fevers, in brain lesions, in carbo hydrate starvation, and following anaesthesia from ether or chloroform. The author found acetone in pathological amount in the urine of seven out of thirty-three cases of anaesthesia, but in only one was it accompanied by symptoms of intoxication. The subject offers a fruitful field for further investigation.

PRIMITIVE, PREHISTORIC TREPHINING.

The 'Medical Press' of Aug. 20th, has a special article of great interest on this subject. An important contribution has recently been made by Rev. J. A. Crump in the 'Journal of the Anthropological Institute' dealing with the trephining practices of the inhabitant of the South Sea Islands. The evidence from skulls found, shows that in the 'polished stone' age the operation was occasionally performed, and among the primitive islanders it was done by scraping with a piece of flint or broken glass when that could be procured. It has been suggested that the object in view was to release the evil spirit which possessed the sufferer from epilepsy, ante-mortem operations seem to have been performed in most cases on patients early in life, and it is found too that post-mortem operations have been done on those who have submitted in early life to the trephining. The explanation of this is that these persons had been regarded as of sacred personality and after death fragments of the skull were in demand as armlets or charms. Peculiarly enough, where this had been done, attempts had been made to complete the form of the cranium by pieces from other skulls, an argument, to Mr. Broca, that, believing in a life after death, the natives wished that those from whom the armlet material had been taken should not lack the full cranial equipment.

Specimens of trephined skulls have been found in all the pre-historic ossariums that are scattered over Europe—some indeed, with the seat of operation over the motor area, while in Yucay, Peru, specimens are found that antedate the European period, and in the valley of the great lakes, especially in Michigan, many specimens are found in the mounds. In New Britain, according to Mr. Crump, the operation is frequently done for fracture which results from blows with the sling-stone or stone club, with a great measure of success, and few deaths from secondary processes. The instrument used is a piece of shell or flake of 'obsidian'—a kind of natural, volcanic glass, and the operator is the 'wizard' of the

district. In New Ireland, the operation is performed for epilepsy, and for severe, throbbing headache, and the writer has in his possession one skull which has been trephined five times. The cures are many and the operation quite popular. The 'Kabyles' of Northern Africa also perform the operation as a purely surgical measure, but are the only race there, who do so. Altogether in surgery, there would seem to be 'nothing new under the sun.'

OLEATE OF ZINC. DRAWBACKS OF THE B. P. PREPARATION.

IN the *Medical Times and Hospital Gazette*, Oct. 14th. Eddowes calls attention to the drawbacks of the B. P. preparation of oleate of zinc, pointing out that it becomes rough, rancid and hence acid and that it cannot be evenly spread out or applied. On the other hand, the olea palmitate of zinc, as prepared by Parke, Davis and Co., does not become rancid, can be dusted evenly on the skin and is almost imperceptible on smooth surfaces, while it imparts just the waxy or greasy effect which is needed to protect the epidermis from moisture and hence is well suited for the treatment of "occupation" eczema where the indication is to protect from moisture where the patient has frequently to wet the hands.

OVARIOTOMY FOR INOPERABLE MAMMARY CANCER.

IN *The Lancet* Oct. 4th, D'Arcy Power reports three cases of inoperable mammary cancer in which recourse was had to ovariectomy in the hope of relieving the symptoms.

In one case, a woman aged 42, suffering from a large tumor of the right breast with involvement of the skin, glands and left breast, ovariectomy was performed on April 24th. The patient showed marked improvement, including in the decrease in the size of the tumor and of the affected axillary glands, with increase in weight. This improvement was kept up at the time of reporting the case in September.

Two other cases aged respectively 52 and 55 were operated on, but did not show a similar improvement, and seemed to indicate that this mode of treatment is not effective after the menopause.

PRACTICAL DISINFECTION IN SCHOOLS.

IN the '*Practitioner*' for September, Houston has an exhaustive article on this subject, which is in the main applicable to the disinfection of dwelling houses. He summarises as follows: For rooms and for furniture, books, boots, shoes, and articles liable to be injured by steam disinfection, formic aldehyde vapor, preferably Lingner's (glycoformal) ap-

paratus, one apparatus for a room 2,800 cubic feet, 2 litres of glycoformal being used. Duration of exposure 4 hours.

For general washing purposes, corrosive sublimate 1 in 1,000.

For excreta, sputum, vomited matters, corrosive sublimate 1 in 500. Duration of contact one hour. The mixture to be thorough.

For linen, cups, saucers, plates, spoons and knives, boiling water.

For bedding, clothes, hangings, carpets and under garments (other than linen) saturated steam at 115° C. for 30 minutes.

This would indicate a reasonably safe and practical method without reference to alternative methods or choice of different disinfectants.

ANTIDIPHThERIC SERUM.

WITH regard to the durability of this serum the following excerpt from the circular letter issued to the profession in France by the Minister of the Interior, reproduced from the '*Chemist and Druggist*', is of interest :

"The mortality of diphtheria has been reduced by the use of anti-diphtheritic serum. It frequently happens that when doctors have anti-diphtheritic serum which is a few months or even a few weeks old, they will not use it, and prefer to wait for a fresh supply. In this way precious time is lost, and often the life of the patient is endangered by the delay. Medical men certainly may get new serum if they judge it necessary, but they should immediately use what they have in hand. *Repeated experiments have shown that the serum loses none of its curative qualities by being kept even for a year.* When the injection of serum is made the very day the false membrane appears the mortality is practically *nil*, and does not exceed two per cent. When the injection is made the second day the proportion of mortality increases to six per cent."

ACETOZONE IN TYPHOID.

IN the *Therapeutic Gazette* of October 15th, Abt and Lackner, Chicago, report forty cases of typhoid fever treated with Benzoyl Acetyl Peroxide (Acetozone), at the Michael Reese Hospital. The average age of the patients was eight years and nine months, and there were complications in thirteen cases. The following is a summary of their conclusions :

The Widal test gave positive reactions in every case.

The diazo-reaction was seen in the urine of twenty-five cases ; was absent in eight cases ; and not tried in seven cases.

The spleen was enlarged and palpable in thirty-eight cases.

Rose spots were present in twenty-five cases, and epistaxis present in four cases.

Acetozone in the powder, plain, or mixed with jelly or raspberry syrup, is not palatable, and mixed with milk is objected to by the majority of patients; the aqueous solution, to which a few drops of orange extract is added, is the most easily taken.

Nineteen ounces of the acetozone were used in the test; an average of 210.5 grains to each patient, or less than one-half an ounce.

Recovery took place in all but two cases, one of which succumbed to pneumonia and edema of the lungs and the other as a result of great pyrexia on the fifth day.

Stupor and tympanites were almost entirely absent in our series of cases.

Hemorrhage occurred twice, both times in the same case.

The characteristic typhoid fetor of the stools was markedly diminished.

Acetozone does not seem to act upon the heart or respiratory organs.

The average duration of the illness before admittance to the hospital of thirty-seven cases was eight and one-half days; in three the time could not be ascertained.

The average duration of the fever after the acetozone was begun was thirteen and one-half days in thirty-seven cases, including two relapses.

The average duration of the illness from inception to convalescence of thirty-six cases, including the two relapses of six days each, was twenty-three and six-tenths days. In four cases the records are incomplete.

The duration of the disease is reckoned from the day the patient became sick enough to be cognizant of the fact.

APPENDIX CLAMP.

IN the *Journal of the American Medical Association* for October 11th.

Eastman, of Indianapolis, advises that, in the operation for removal of the appendix, the amputation be done by a Paquelin cautery, and to facilitate the operation and meanwhile protect the caecum from injury he has devised a clamp fitted with shields which are removable, for holding this organ during the amputation. After this has been done, the purse-string or Lembert sutures are put in place, a probe is passed to make certain of the potency of the opening, then the stump is invaginated and the sutures tied.

DISEASES OF THE EYE, EAR, NOSE AND THROAT.

Conducted by PERCY G. GOLDSMITH, M.D., Belleville, Fellow of the British Laryngological, Rhinological and Otolological Society.

GLIOMA OF THE RETINA - A REMARKABLE FAMILY HISTORY.

NEWTON, in the *Australian Medical Gazette* for May, cites an interesting case of glioma of the retina in both eyes in a child two years of age. Enucleation would not be allowed, and no treatment was therefore adopted. The *family history* formed the most interesting feature of the case. The present case was the youngest of sixteen children, of whom ten had been afflicted with glioma of the retina and died. None lived over three years. Seven of the cases were bilateral. Of the seven who died without operation, the eyeballs ruptured in every case except one.

THE EAR IN RELATION TO GENERAL MEDICINE.

MACLEOD Yearsley, F.R.C.S., in *The Medical Times and Hospital Gazette* for August, writes on the intimate relationship that should exist between the otologist and the general practitioner. The ear is not merely the organ of hearing, but is equally the peripheral organ of equilibration, and a supplemental organ for space perception; and the surgeon who, so to speak, never views the ear through anything but a speculum, who never thinks of anything but local treatment, is not an otologist and never will be one. The necessity of facilities for continual practice is insisted upon, as, without this, the manipulative dexterity, necessary in aural work, will be wanting.

The close association that should exist between the family physician and the specialist is nowhere more necessary than in the young, where, by timely interference, not only may the auditory function be saved, but life itself. Politzer's favorite text is quoted: "The temporal bone is four-sided. On the one side it is bounded by life; on the other three sides, by death." The care of the ear, during the exanthemata, is strongly insisted upon. Frequent examinations of children's ears and throats are advised, so that commencing deafness, with or without discharge, and the presence of adenoids, with their far reaching effect on the general health, may be met by proper means. Mention is made of various aural reflexes that may exist, as *ear cough*, *ear sneeze*, and, occasionally, epileptiform convulsions. Not infrequently tympanic congestion, with slight deafness,

and tinitus are due to menstrual disorders; and should be treated by the family physician, and not by the aurist. The connection between the kidneys, digestive organs, the circulatory system, and various intra labyrinthine lesions, is pointed out, showing the advantages of mutual exchange between the family physician and the aural surgeon.

THE PINEAPPLE IN LARYNGOLOGY.

WYATT WINGRAVE, in the June LANCET, writes on the value of pineapple as a proteid digestant. Its active principles is Bromoline, which is completely destroyed by preserving and cooking. He states that the pineapple has a valuable and powerfully solvent action upon plastic exudation, such as diphtheritic membrane, and he recommends it to soften the horny papillæ of keratosis of the tonsil.

LABYRINTHITIS AFTER ADMINISTRATION OF SALICYLATES.

SCHEYER, in *Wiener Med. Presse*, reports the case of a laundress who was given .5 gm. sodium salicylate five times daily in the treatment of a second attack of acute articular rheumatism, three years after the first. After a week of this treatment, symptoms of an affection of the middle ear developed, and persisted, notwithstanding suspension of the drug, resulting in permanent deafness, complete in one ear and partial in the other.

Sodium salicylate and quinine should be given with caution, in large doses, to those whose middle or inner ear is abnormal.

THE EARLY TREATMENT OF SQUINT.

THE idea that squint is a condition which will spontaneously subside, as the child grows older, is no doubt the reason why so often no attempt is made to remedy the defect, until after the lapse of many years, until, in fact, much, and it may be irreparable, damage has been done to the visual powers of one of the eyes. Another erroneous idea, also very prevalent, is that if a child be made to wear glasses for the purpose of obviating the tendency to squint, the wearing of glasses will thenceforth be compulsory. It is hardly necessary to point out that the exact opposite is the case, that indeed, if the patient be brought under treatment as soon as the squint is noticed the glasses, in the majority of instances, can be laid aside at or soon after puberty, being, in fact, needed after that period only in presence of some marked error of refraction,

which would in any event necessitate their use for near work. Now that a commencement has been made with the methodical examination of the refraction in school children, we may hope that a better knowledge of the elementary facts of optics will permeate the masses, increasing the child's perceptive faculties and remedying early the tendency to this disfiguring error of convergence.—*Medical Press and Circular*.

A SIMPLIFIED METHOD OF OPERATING FOR DEFLECTION OF THE CARTILAGINOUS SEPTUM.

DUNDAS GRANT, in the September *Journal of Laryngology*, describes another method by which these troublesome cases may be managed. He combines the methods of Moure and Roberts, thereby doing away with the former intra-nasal splints, which the author has found very satisfactory. A strong needle is introduced into the nostril, and passed through the septum, on the concave side, anterior to the convexity. Having passed through to the other side, it is then used as a lever to press the convex part into the concave side, being then passed back through the septum, so as to keep it in position. Moure's cuts are then made by Moure's shears, horizontally below the deflection, then obliquely in front of and above it, parallel to the ridge of the nose, the incisions NOT meeting in front. This triangular piece of cartilage may now be manipulated with the fingers to encourage over-riding.

CONGESTION OF THE EYE.

LEIDY, in *Amer. Med.*, says: In congestive conditions of the eye of gouty origin with pain and tenderness, I have found prompt relief not only from pain, but almost instant clearing of the conjunctiva and associated vascular system, the congested eye clearing and appearing almost normal, from the instillation of 2 or 3 gtt. of the following:

| | | |
|---|---------------------|-----|
| R | Formahn | 005 |
| | Cocain hydroch..... | 1 |
| | Aq. destil..... | 10 |

EAR DISEASE IN HYSTERIC SUBJECTS.

VOSS, in the *Archives of Otolology*, summarizes his paper in the following: "1. The objective picture of an acute otitis media may appear as a symptom of hysteria. 2. Pure functional neuroses of the ear should be treated, not by an otologist, but by a neurologist. 3. In these cases an absolute contra-indication exists against too much treatment, especially of the nose and pharynx. 4. The generally well-known

craving of hysterical subjects for operations may also centre upon the ear (and probably also upon the nose). 5. Opening the mastoid process to relieve the mastalgia of hysterical patients is absolutely contra-indicated. 6. Our present method of after-treatment of radical operations with prolonged tamponing is not at all suitable for children or nervous and hysterical patients. After the fifth day the tampon is entirely superfluous and should be replaced by a simple outer dressing."

HAEMORRHAGE IN NASAL OPERATIONS.

MCREYNALDS, at the American Rhinological, Laryngological, and Otological Association, reported a case of severe haemorrhage following the removal of an exostosis, situated rather high in the nose. Adrenalin had been used, but the haemorrhage occurred very soon after the operation. When the patient was seen, he was almost exsanguinated, and the haemorrhage was only controlled by plugging the posterior nares. In the discussion which followed, various devices were spoken of as being useful in such cases. Freudenthal of New York uses a double ice bag applied like a saddle over the bridge of the nose, and stypticin internally. Stucky uses a strip of dental rubber, over which is placed a piece of Bernay's sponge or splint. Goldstein found that saturating the cotton, or gauze, with oil, in order to make it impervious, gave better results than when other than oily solutions were used. Adrenalin, in strengths of one to six or eight thousand, was frequently very efficacious. Ellis puts his patients on calcium chloride prior to operating, and claimed that secondary haemorrhage was made much rarer.

BACTERIOLOGICAL DIAGNOSIS OF MEMBRANOUS INFLAMMATION OF THE THROAT BY A SIMPLE METHOD.

BAYNE, in the *Jour-Eye-Ear and Throat diseases*, gives a very practical plan by which a rapid differential diagnosis may be made. "Take an egg and boil until hard. Then with sterilized forceps break very gently into the air sac, and peel off the shell and membrane immediately beneath it, leaving enough of the same to protect the culture. Take a swab from the throat, gently smearing it on the surface of the egg, under that part of the shell, which is left. Then take an ordinary cup, and pass it through a flame very rapidly several times to sterilize it. Place the egg in the cup with the broken end down, and leave it by a stove for twelve hours. By this method there is obtained an almost pure culture of diphtheria bacillus, in from eight to twelve hours, as this organism grows more rapidly than the others usually present.

PROVINCE OF QUEBEC NEWS.

Conducted by MALCOLM MacKAY, B.A., M.D., Montreal.

Assistant to the Professor of Neuro-pathology, McGill Medical College.

THE meetings of the Montreal Medico-Chisurgical Society have been well attended during the last month, and many of the papers and specimens presented were of exceptional interest. One of the most important of the papers entitled 'Preliminary note upon employment of an anti-streptococcus serum in severe cases of scarlet fever,' was read by Dr. Charlton. He began by referring to a very recent article by Dr. Paltauf of Vienna, which stated that the anti-streptococcus serum had been used clinically since Nov. 1901 in about 84 cases with the result that the mortality among 400 cases of the disease in the St. Anne's Hospital has been reduced one half.

Only the more severe cases in the hospital were treated with serum on account of the difficulty in obtaining a sufficient supply. All of the children who were treated within three days of infection, recovered; their condition underwent a striking and rapid improvement, and the pyrexia in many cases greatly abated. In consequence of these results, Dr. Charlton felt justified in reporting the cases upon which he has been working since Jan. 1901, although few in number.

While working upon scarlet fever cases, it was found that, in cultures taken from the tonsils and pharynx of 117 patients, streptococci were found in 55.5 per cent. From 25 of the more severe cases cultures have been obtained from the blood during life, and always from the pus of suppurating glands and the discharge from otitis media, while the urine also has been found to contain streptococci. In the mild, uncomplicated cases none were found, and these were the cases which gave no trouble and made a rapid recovery. The severity of the attack appears to be due to the concurrent action of this micro-organism and the causative germ of scarlet fever upon the susceptible individual. The administration of anti-streptococcus serum was therefore indicated, to counteract the effects of the toxins of the streptococcus, and to bring about the destruction of that organism. Several scrums were tried by Dr. Charlton with little effect, but, with the last, specimen which he obtained from Dr. Hubbard, he has, since June last, treated with encouraging results 15 cases of scarlet fever. All of them were severe, and the majority would have in all probability either have ended fatally or have been followed by complications under ordinary treatment. Thirteen recovered promptly with

practically no complications, that is there was no albuminuria and no otitis media. In all the cases upon admission there was involvement of the cervical glands, but only in two instances did they go on to suppuration; in the other cases, resolution occurred within 48 hours after the injection of the serum. There were two deaths. One happened four hours after entering the hospital, the patient being moribund on admission. The other, who was also suffering from pneumonia, succumbed to laryngeal diphtheria.

The quantity of serum injected is usually 20 c. cm. and the effect is generally prompt, the temperature falling within two hours and returning to normal in two to four days. Desquamation is as a rule complete by the thirty-second day. A summary of the results obtained by the injection of the serum is as follows:

1. Rapid subsidence of the pyrexia.
2. An accompanying decrease in pulse-rate with improvement in tension or rhythm.
3. Prevention, or at least, marked amelioration of such complications as cervical adenitis, otitis media, and albuminuria.
4. Rapid and favourable convalescence in the majority of cases.

At a former meeting, Dr. Adami showed a pathological specimen of a recto-vaginal fistula due to cancer of the neck of the uterus with subsequent sloughing. It was of large size, three fingers being easily admitted into the opening. In addition the patient showed a condition of true chylous ascites, the chylous fluid being also found in the left side of the thorax. It was found that the thoracic duct was pressed upon by enlarged glands, opposite the body of the fourth dorsal vertebra, with consequent swelling of the duct below this point. This obstruction undoubtedly accounted for the milky fluid found in the abdomen and chest.

Drs. Finley and McRae reported a case of congenital absence of the left kidney. The patient was 36 yrs. old when he died, and the history and symptoms pointed to interstitial nephritis. Uræmia was the cause of death. The post-mortem showed that the left kidney was quite absent, although the suprarenal was present and of normal size. The trigone of the bladder was normal, but the opening for the ureter ended in a blind pouch about half an inch in length. The right kidney was small and granular, weighing but 90 gms. Microscopically, the glomeruli were unusually large—about three times the size of those found in a normal organ.

Dr. Anderson demonstrated an unusual specimen of a heart with congenital absence of the right side. The child appeared to be normal at birth, but within twenty-four hours became much cyanosed and died

shortly after. A very hurried post-mortem was made owing to limited time, and in consequence the doctor was unable to trace the great vessels, but he removed the heart and lungs together. The heart consisted essentially of an auricle and ventricle with a bicuspid valve between. Two veins lead into the auricle and one artery away from the ventricle. The distribution of the branches of the aorta are quite anomalous, but, as previously stated, they could not be definitely traced on account of the short time allowed for the post-mortem. On looking up the literature of the subject, it was found that no similar instance of complete absence of the right side of the heart, in a full term child, had been recorded.

The fifty-eighth annual meeting of the Montreal Maternity Hospital was held at the beginning of the month at the hospital, St. Urban Street. The annual report stated that the new hospital building decided upon would cost \$100,000, and that, as only \$65,000 had been collected for the hospital fund, \$25,000 of which had gone for the purchase of the site, it was felt that the money necessary to make up the sum named in the estimates for the building must be obtained before work was begun, as the equipment of the hospital would be an additional expense. It was hoped, however, that before the next annual meeting work would be begun on the new building. The treasurer's report showed a balance of \$5,137 now in the bank. Dr. Cameron read the medical report which was also very satisfactory; 239 patients were treated during the year among whom three deaths occurred.

The thirty-second annual dinner, given on Nov. 6th, at the Place Viger Hotel, under the auspices of the graduates and undergraduates of the university of Bishop's College, was a great success in every way. The presence of the Hon. I. J. Tarte lent additional interest to the proceedings. In his speech, he kept rather strictly to generalities, but mentioned Dr. Roddick's bill, which he strongly supported. He also spoke of the Montreal Civic Hospital, and suggested that there should be a building in common to both sections of the people, under one medical administration; but that the Roman Catholics might have their own nurses if they wished it.

Dr. W. H. Drummond in replying to the toast, "Our Deans and Professors," spoke of the emigration of our prominent medical men to the United States, but he believed that the development of Canada would soon put a stop to this, and he urged the students to neglect secret societies and work for the good of the institution and Canada.

Principal Whitney, Dr. Grant Stewart, and Sir W. Kingston, were also among the speakers of the evening.

MEDICAL SOCIETIES.

THE TORONTO MEDICAL SOCIETY.

(STATED MEETING NOV. 6TH.)

The president, Dr. Hay in the chair.

DR. McPhedran presented a case in practice:—A young man, age 30, cutter by trade, habits irregular. At 19 he had syphilis and was under treatment for a short time. He then stopped treatment, and was well for 4 years. 6 years ago, there was a fire in his shop, and, on the Police waking him, he found his legs were weak, being hardly able to carry him. There was a gradual decline in power, he was always worse after a night's dissipation, and continued to grow worse for three years, since that time there has been little change. The bladder, when full, dribbles, if not emptied, sexual functions is impaired, and the system sensory is good above the legs. A condition of spasm is marked in the right leg, knee jerk is exaggerated, especially on the right side. Ankle clonus, and dorsi-flexion of the great toe are extremely marked.

Dr. Peters read a report of a case of Femoral Hernia, containing the whole of the Omentum and Transverse Colon and the Bladder.

Mrs. M. aged about 75 years, had suffered from femoral hernia on right side for over 30 years. It had never been reduced, but had increased in size, particularly during the last 18 months. At the time of operation, the tumor extended from the anterior superior spine of the ilium to the symphysis pubis; and, depending from that base, to an apex which, in a standing position, was situated about four inches below Poupart's ligament. Its neck was external to the spine of the pubes. Until the last year it had given but little trouble, but latterly the tumor had increased so much in size and was so painful that she was quite incapacitated for work, and was practically bed-ridden. She described the presence of colicky pains in the tumor, but any more definite history was not obtainable, owing to the senile feebleness of mind which was present in the case.

A curvilinear incision, about 4 in. long, was made over the tumor, slightly below the level of Poupart's ligament, so that its middle would correspond to the position of the femoral ring. On opening the sack, it was immediately apparent that it was occupied by the transverse colon, and the whole of the omentum which was enormously thickened and matted together. As it was found impossible to disentangle the folds of

omentum, the whole mass was ligated in sections by interlaced ligatures of silk and removed. Even after thus reducing the size of the mass, it was found impossible to reduce it without completely severing Poupart's ligament, and even when this was done, reduction was effected with considerably difficulty. Up to this time, the presence of the bladder, as a part of the protruding mass, was not suspected; and, in fact, it was during the process of separating the sac, with a view to forming a pedicle, that the bladder was accidentally opened, and a flow of urine occurred. Even then it was thought that possibly the fluid had been contained in a cyst in the canal of Nuck; but, on passing a sound into the bladder, the true nature of the condition was revealed. The protruding portion of the bladder was not properly contained within the sac of the hernia, but constituted, in fact, a portion of that sac, and was surrounded and covered by a thick layer of adipose tissue. When the nature of the condition became apparent, the bladder wall, which was greatly stretched and attenuated, was carefully closed by two layers of continuous sutures of very fine cat-gut. The bladder was then returned, and the peritoneal margins of the hernial sac were sutured together. Attention was now turned to the performance of a radical cure of the hernia by stitching the margins of Poupart's ligament, turning up the fascia covering the pectineus muscle, and making it fast to Gimbernat's and Poupart's ligaments. A small drain of iodoform gauze was then passed down to the region of the rent in the bladder, and the remainder of the skin wound was closed with cat-gut and silk worm gut sutures. Though the operation was tedious, and notwithstanding the decrepid condition of the patient, she made an uninterrupted recovery. She seemed to suffer but little from shock, and had little pain. The bladder was drained for three days, by means of self-retaining glass catheter, no leakage whatever occurring at the wound. The gauze drain was removed on the second day, and the subsequent progress of the patient was perfectly satisfactory. There is a slight prominence of the whole area of operation, but no distinct recurrence of the hernia. The main points of interest were —

1st. The unusually large size to which this femoral hernia had grown.

2nd. The fact that its contents consisted of the omentum and transverse colon, which are very seldom found in femoral hernia.

3rd. The presence of the bladder in the wall of the hernia.

In regard to the first two but little need be said. It is evident, however, that the transverse mesocolon must have been enormously elongated, in order to permit the whole of the transverse colon to occupy a level below Poupart's ligament. The fact that the hernia had been irreducible from the first probably was a reason for the firm matting together and hypertrophy of the omentum which no doubt occurred in situ. The massive character of the hernia was due, therefore, not entirely to extrusion of more and more of the abdominal contents, but to an

increase in the dimensions of the parts already extruded. The presence of the bladder in the tumor, however, is of much more than passing interest. Hernia of the bladder in any situation is a very uncommon condition, and hernia into the femoral canal much more rare than that into the inguinal canal, or through the linea alba.

In the causation of hernia of the bladder, two factors appear to be operative in different instances. In the first place the hernia is preceded by a dilatation of the bladder, due to some obstruction to the out-flow of urine. In that case, the violent straining serves to bring about a hernia through the linea alba, or through other hernial openings, on the same principle as in the formation of ordinary hernia of the intestines. The other variety of cause is mentioned by White and Martin in their work on Genito-urinary Diseases as follows: "The most frequent cause of bladder hernia is a preceding intestinal hernia, which, as it progresses and drags on the peritoneum in the formation of a sac, involves the bladder." This condition clearly explains the occurrence of the hernia of the bladder in the case related, since the hernia was of such large dimensions that it could not acquire a sac for itself without involving that portion of the peritoneum which covered the bladder. In that manner, then, without doubt, the bladder was drawn into the femoral opening, and constituted a portion of the wall of the sac.

Discussion.—Dr. Rudolf asked if there had been any signs of irritation of the bladder?

Dr. Oldright said it was advisable to be sure where the bladder was by passing a catheter, or have a nurse do it before doing any abdominal operation.

Dr. Hunter asked why in one so old an operation had been thought necessary?

In reply Dr. Peters said that the bladder had not been irritable, that the history had been very incomplete, and no definite information could be got from the patient, owing to her mental condition. He was not certain that we do not operate enough in old people. He agreed with Dr. Oldright, but he would not allow a nurse to pass the catheter, nor would he, if it could be avoided. The bladder was often covered with fat, and, in clearing this out, it was often injured.

Dr. Oldright reported a case of Surgical Emphysema and Hæmatemesis. While at work, the man had stepped on the end of $\frac{3}{4}$ in. board throwing it up and striking his throat against the end, he fell but got up again and tried to go on with his work. Unable to do so he went home on the cars. He had had previous attacks of dyspnoea and thought this one of the usual kind, as, however, there was no improvement after his usual treatment, Dr. Wylie was called, and Dr. Oldright saw him later in the same evening with Dr. Wylie. Emphysema was very marked, extending up the face to the level of the Zygoma on each side, and downward over the thorax. The neck was bluish in color from blood and he was also vomiting blood. After death, the trachea was removed and was presented for examination. It showed a tear on the left side of the trachea, extending into the Aesophagus, and two other small tears.

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EDITORIAL.

THE CANADIAN MEDICAL PROTECTIVE ASSOCIATION,

IT would be difficult for the members of the medical profession in Canada to imagine any organization that would be of greater use to them than a powerful and well managed Protective or Defence Association. From time to time, medical practitioners are called upon to defend themselves, in the courts of law, against actions for damages, under the charge of malpractice. Most of these cases arise out of complete ignorance on the part of the plaintiffs, or his friends, or from a desire to extort money from the medical attendant, under the assumption that he would pay something rather than have the unpleasant notoriety of such a suit against him, or be put to the expense of a defence. Most people are aware of the fact that law is a costly thing. In many instances of threatened action against medical men, the real motive is to extort money as blackmail.

At the meeting of the Canadian Medical Association in Winnipeg, 1901, it was resolved that steps be taken to organize a Medical Defence Association. Dr. R. W. Powell, of Ottawa, was elected president, and was asked to undertake the work of organization. Dr. J. Camarind, of Sherbrooke, Que., was made vice-president; Dr. J. A. Grant, Jr., of Ottawa, was chosen as treasurer; and Dr. F. W. McKinnon, of Ottawa, as Secretary. These gentlemen have given a vast amount of valuable time and thought to the promotion of the Defence Association. They deserve and no doubt will receive that generous support from the profession, which their efforts merit, and the importance of the work demands. At the recent meeting of the Canadian Medical Association held in Montreal, these gentlemen were all re-elected.

But it will not do for the members of the profession to think that they have done their duty, when these gentlemen were re-elected. This is but a small part of the duty which each member of the profession owes to his fellow members. Excellent officers have been chosen. The writer happens to know something of the good work they have already accomplished. The real duty of the individual practitioner is that of becoming an active member of the Association. The annual fee has been placed at the merely nominal sum of \$2.50. This is as nothing when it is compared with the advantages of such an organization.

Of these advantages we need only mention two or three. In the first place, if an action for damages is brought against a member, he receives financial assistance. This makes him bold in resisting an unjust attempt to extort money from him. Another advantage is to be found in the fact that such an organization would go a long way towards preventing malpractice suits. Most suits of this kind are unjust and known to be so to the plaintiffs. If it was known that they would have the entire profession to fight, instead of a single member thereof, they would count the costs with much more care before they embarked on their suits. And, again, the costs would fall lightly on the defendant member. It is not beyond the truth to say, that, though an action may be unjust, and could be successfully defended, the doctor against whom it may be brought could ill afford to defend himself, or, if he did, he might be well nigh ruined in doing so. This can all be avoided by being a member of the Canadian Medical Protective Association. But there is one more reason for joining this organization. Nothing will bind the profession together like that of mutually helping each other.

The profession as a whole is loyal to each other; but it is in a sort of indefinite way, or merely by a feeling of professional goodwill. Here is something concrete. Each member of the Union feels that he has a direct interest in all the others; and, in turn, feels that they have a personal interest in him. In the time of trial, this will be most keenly appreciated.

Already the Association has rendered yeoman assistance to several of its members, against whom action for damages have been brought. This assistance would have been much greater, if the funds had permitted the executive to have been more generous—as generous as they would wish to have been, and as the righteousness of the cases demanded. But what the Committee has done is only an earnest of what it will do in the future. There are two things that each member of the profession can do. The first is to send in his own fee of \$2.50 to the treasurer of the Association, Dr. J. A. Grant, Jr., of Ottawa. The second is to induce others to do the same thing by upholding the claims of the Protective Association in his locality. One of the most successful ways of helping yourself is to help others. By assisting your fellow practitioners in the hour of their trouble, you secure their sympathy and assistance in the hour of your own trial and anxiety.

It must be a cardinal principle in the Society that the Association cannot be responsible for acts in a member's career prior to his joining. Special cases will arise deserving of consideration, or where a suit is laid against a man after he has joined, but where the act, on which the suit

is based, occurred before membership and yet, at the time of joining the Association, the member was unaware of any suit pending. If this principle is not laid down and understood, the Society will be a failure, because there would be no incentive to join until trouble looms on the horizon.

Another point of importance is that no real practical difficulty will arise, when a case is laid in a Province a long way from the seat of the Executive. The Executive will take means to employ local provincial counsel, and all that they would have to be possessed of would be an opinion on the merits of the case, by a local committee of our own profession, well qualified to judge of the facts.

That union is strength could be nowhere more perfectly illustrated than it is by the present organization. It is a matter of the greatest encouragement to those who have legal action pending against them, to know that they have such backing; and it has had the effect of stopping more than one suit by its deterrent influence. We know of some cases where doctors have been nearly ruined by the expenses involved in their own defence. Recently three cases for malpractice have been tried in Ontario courts, and, in every instance, the doctors won. Their victories, however, cost them heavily. Let the profession of this country adopt the national motto of the great country to the south of us, *E pluribus unum*. The following free translation of a beautiful stanza in one of Horace's odes, may not be inappropriate:—

"Thrice happy they, whose hearts are tied
In love's mysterious knot so close,
No strife, no quarrels, can divide,
And only death, fell death, can loose."

THE UNIVERSITY OF TORONTO MEDICAL STUDENTS V. THE POLICEMEN.

THE University of Toronto Medical Students were spending Hallowe'en at the Student's Union, with Professor Reeve, Dean of the Medical Faculty and some other members of the teaching staff. On their way home, and prior to their separating for their respective homes, while walking along the street and singing some college songs they were charged by a number of mounted policemen. The students offered no resistance, nor were they doing anything that justified the attack made upon them. Professor Reeve, who was with the students, complained of the action of the policemen on the occasion in question. He was given a hearing before the Police Commissioners, and spoke as follows:—

"It was also high-time a definite understanding was reached as to what was permissible on the part of students on ordinary or extraordinary

occasions. Toronto could afford better to do without her police than without her students. Students and citizens had not only some rights, but some liberties that a policemen had not, and when the guardians of the peace became the aggressors it was time for citizens to complain. Some of these young men had fought in South Africa, yet on returning peaceably from an entertainment, they were hunted about like cattle—worse treatment than the Boers received. Their crime seemed to be that they had walked upon the sidewalk, not injuring persons or property, not carrying sticks, and merely singing. The treatment was suggestive of what they read about in Russia.”

Dr. Reeve's action in this matter is highly commendable. After the case was fully heard and discussed on both sides before the police commissions, four of the police force were fined. In this, both Dr. Reeve and the students were amply vindicated in the stand they had taken against the treatment to which they had been subjected by the police on the occasion. The report of the Police Commissioners concludes with the following words:

“The extensive powers entrusted to the police, the exercise of much of which must be left to the sole discretion of the individual officer, frequently under trying circumstances, calls for the soundest judgment and the utmost self-control. In the present instance the board regret that the officers abused their powers without sufficient justification.”

THE ONTARIO MEDICAL COUNCIL.

BY the time this issue of THE CANADA LANCET will have reached its many readers, the election of members to the Council will be over. We hope the choice made in the various electoral districts will prove a wise one. During the many years that the Council of physicians of Ontario has directed the medical affairs of this Province, many and important changes have been effected. There are some who will maintain that the Council has not always done the very wisest thing. But it is a much easier matter to criticise acts than to formulate these acts and to carry them into execution.

Take the records of the Council as a whole for the past 25 years, and it will at once be apparent to all that the general movement of thought has been in the direction of the elevation of the standard of the medical profession of the Province. As a proof of this statement it would be difficult, indeed, we think it would be impossible, to mention any country or province in which the medical educational standard is superior to that of Ontario. This is surely not a cause for complaint; but, rather, one for congratulation.

The Council has for some years demanded a five year course of study. The Province of Quebec is now moving in the same direction. Some rather sharp criticism has been passed upon the action of the Ontario Medical Council for its attempts to raise the standard of preliminary education. This should merit praise, and not condemnation. To have a good liberal education before entering upon the course of professional studies is of the utmost value to the student; and, later in life, to the public. At the recent meeting of the Board of Governors of the Physicians and Surgeons of Quebec it was decided to require the complete classical course, or what is equivalent to a degree in arts. This is much higher than the standard in Ontario. We hope that the Medical Council will continue in the same frame of mind it was in last year, when it decided upon the honor matriculation as the minimum standard of entrance to the profession. To this attitude, no member of the profession should dissent; nor should any person in the general public, when it is borne in mind that one of the chief glories of any country is a highly educated medical profession.

ANTI-STREPTOCOCCUS SERUM IN SEVERE CASES OF SCARLET FEVER.

MEDICAL practitioners will welcome any genuine advance in the therapeutics of scarlet fever. It has long been known that some epidemics of this disease assume a most malignant and fatal type. In the October number of the *Montreal Medical Journal*, Dr. G. A. Charlton contributes a paper on the serum treatment of severe cases. He refers to the results obtained by Paul Moser, of Vienna, who states that, in 400 cases treated with the anti-streptococcic serum, the mortality has been reduced one-half. Only the severe cases were thus treated. All who were treated within the first three days recovered. Their condition underwent rapid and striking improvement, and the pyrexia in many cases greatly abated.

Dr. Charlton states that he has studied bacteriologically 117 cases. Cultures were taken from these cases, and streptococci found in 65 or 55.5 per cent. From 25 of the most severe cases cultures were taken from the blood and the germ always found to be present. They were also found in the pus of suppurating glands, or purulent otitis. As the result of these observations, the author came to the conclusion that the streptococci lead to a secondary infection, and that this secondary streptococcal infection is the cause of most, if not all, of the unfavourable

complications of the disease. The severity of the attack appears to be due to the concurrent action of the micro-organism.

The administration of anti-streptococcus serum was, therefore, indicated to counteract the effects of the toxins of the streptococci and to bring about the destruction of these organisms. For it appeared that if this could be accomplished, the cases would resolve into a less severe type and the prognosis would become more favourable. Of several sera employed, the one that yielded by far the best results, was that prepared in the biologic laboratory of F. Stearns & Co., of Detroit. In some severe cases, the author has no hesitation in saying that, under ordinary treatment, they would either have been fatal, or have suffered from lingering and troublesome complications.

The quantity of serum injected has been moderate. The usual dose was 20 c. cm., but in those cases which, from the severity of the attack, seemed to require a larger quantity, this dose was repeated.

The effects of the use of the serum are:—

1. Rapid subsidence of the pyrexia.
2. An accompanying decrease in pulse-rate with improvement in tension and rhythm.
3. Prevention, or, at least, marked amelioration of such complications as cervical adenitis, otitis media, and albuminuria.
4. Rapid and favourable convalescence in the majority of cases.

THE REFERENCE HANDBOOK OF MEDICAL SCIENCE.

MR. E. A. PAUL, representing Messrs. Wm. Wood & Company, the well-known publishers of New York, has been engaged for sometime introducing to the medical profession The Reference Handbook of Medical Sciences. Mr. Paul is meeting with much success. Very many doctors know the work by the former edition, which appeared a number of years ago. The present edition is thoroughly revised, many of the articles having been entirely rewritten. It is the intention of the publishers to issue a further edition in a number of years. To those who take the present edition, a considerable rebate will be allowed on the next edition, the present one being taken back. This offer should commend itself to very many. We have examined the four volumes that have appeared up to date, and can speak in the highest terms of their merit. A good workman will try to secure the very best tools; and, as books are among the tools of the doctor, one would naturally think he would try to secure the best. It would be hard to find anything better than the Reference Handbook of Medical Sciences.

EDITORIAL NOTES.

Elected to the Medical Council.

The following members of the Council of the College of Physicians and Surgeons have been elected by acclamation:—J. L. Bray, M.D., Chatham; J. A. Robertson, M.D., Stratford; L. Brock, M. D., Guelph; J. Henry, M.D., Orangeville; P. Stuart, M.P., Milton; S. H. Glasgow, M.D., Welland; A. A. Macdonald, M. D., West Toronto; J. H. Sangster, M. D., Port Perry; S. C. Hillier, M.D., Bowmanville; T. H. Thorburn, M.D., Conseccon; W. Spankie, M.D., Wolfe Island; J. Lane, M.D., Mallorytown; J. MacArthur, M.D., London; W. Britton, University of Toronto; V. H. Moore, Queen's College; J. A. Temple, M.D., Trinity Medical College.

Justus Test for Syphilis.

Dr. Jacob Justus in 1895 published a paper on a new means of diagnosing syphilis. He contended that if mercury be administered subcutaneously, or by inunction, there will be a diminution in the hæmoglobin in the blood. In the non syphilitic the loss is rapidly made good; but in the syphilitic, at the end of 24 hours, there will be a reduction of from 10 to 20 per cent. in the hæmoglobin. Recent experiments made by Dr. Henry Tucker, of Philadelphia, and Dr. W. E. Huger, of Charleston, and published in *Philadelphia Medical Journal* for 10th May, show that no reliance can be placed in the Justus test. The test fails in several ways. There is sometimes a fall in the hæmoglobin in the case of chancroids. In other cases there is a rise in the amount of hæmoglobin. In the syphilitic cases, there was noticed sometimes a distinct rise in the amount of hæmoglobin, instead of the reduction according to Justus. In this way the test fails both negatively and positively. These experiments go to show that the test is of no practical value.

Toxicity of Ammonium Compounds.

The comparative toxicity of the ammonium compounds was the subject of Drs. Rachford and Crane's paper at the Association of American Physicians. They showed that ammonium, in combination with the acid ions found in the body, formed more toxic compounds than sodium in similar combination. When the ammonium is united with an organic acid, the compound is comparatively non-toxic, but when it is united with an inorganic acid ion, the resultant salt is very poisonous. The potassium ions are about one-half as poisonous as the ammonium ions. The sodium compounds are the least toxic, and hence sodium should be employed as the neutralizer of the acids producing acid intoxication. The acid ions cause acid intoxication by carrying the ammonium.

Arteriosclerosis.

Arteriosclerosis was the subject of a paper by Dr. I. Adler, read before the New York County Medical Association and reported in the *Medical Record* of 10th May. He does not think Thomas' theory that the changes in the arteries can be wholly explained by disease in the muscular coat. He thinks there is a tendency to fibrosis in the tissues of other organs. As the muscular coat yields, the vessels dilate. To compensate for this there is a formation of connective tissue. Chemical and metabolic changes play an important part in the causation of the fibrosis. He mentioned some of the types of arteriosclerosis. There is the cardiac form of the disease, in which the small vessels of the heart, and the coronaries are undergoing change. Another type is the renal, the change taking place in the arterioles and the interstitial tissue. Then there is the cerebral type, with its headaches, vertigoes, and possible hæmorrhages. A spinal type may also occur, resembling ataxy in some respects, but lacking its progressive features. Finally there may be the digestive type, with degenerative changes in these organs. The treatment is mainly to get rid of poisons from the system, such as alcohol, tobacco, lead, syphilis, a proper dietary and the administration of the iodides.

Ovarian Pregnancy.

Dr. John F. Thompson read a paper on the above subject with the report of a case, which is published in the July issue of *American Gynecology*. It is claimed that ectopic gestation is by no means uncommon and that many cases are on record. The statement is made that almost all cases are tubal to begin with. It is almost impossible for an ovum to remain in the peritoneal cavity and become impregnated there, and then take on active growth and development. It is equally difficult for spermatozoon to penetrate into a graafian follicle and there fecundate the ovum in situ. It is, therefore, practically the rule that ectopic gestation commences in the tube where it either develops or escapes to some other adjacent part, and then continues its development. It is held by some that pregnancy can only occur in some part capable of developing a decidua. This would limit the possibility of ectopic gestation to the tubes, where there is a mucous membrane.

In opposition to this view, Dr. Thompson records a case in his practice. The ovary was removed, the patient making a good recovery. There was a distinct ovarian pregnancy. The foetus was about 25 or 30 days growth. The tubes, uterus and the other ovary were quite normal. It was clearly a case of impregnation of the ovum in situ in the graafian follicle.

PERSONAL.

Dr. Hobart S. Gilbert, B.A., of Brooklin, Ont., died last October.

Dr. Armstrong, of Brucefield, has bought the practice of Dr. Spence, of Lucknow.

Dr. Ulyott, of Elmira, and Miss Nettie Snyder were married 23rd October.

Dr. W. H. Alexander, of Toronto, and Miss Laird, of Chicago, were married October 16th.

Dr. Thomas Kerr, of 667 Dovercourt road, Toronto, was married recently to Miss Jean Kerr, also of Toronto.

Dr. C. F. Colter, of Petrolea, who served with the second Canadian contingent in South Africa, was married to Miss Lillian N. Foster, of Belleville, on 18th October.

The marriage of Dr. F. G. Wallbridge, of Midland, and Miss Keating took place on 28th October.

Dr. Patton, of Toronto, had a delightful tour in the United States during October, when he visited a number of the leading cities.

Dr. T. P. Weir, who was formerly one of the medical attendants in the Queen Street Asylum, Toronto, died 27th October at St. Michael's Hospital.

Dr. Charles O'Reilly, of the Toronto General Hospital, has been elected vice-president of the Association of American Hospital Medical Superintendents.

Dr. G. A. Charlton, of Montreal, a McGill graduate of 1900, has been appointed Rockefeller Fellow of Pathology in McGill Medical Department.

Lieut.-Colonel G. Sterling Ryerson, M.D., A.M.S., has been promoted to the grade of Colonel "in recognition of his services as Red Cross Commissioner in South Africa."

OBITUARY.

J. MOORE HART, M.D.

DR. HART, of Toronto, was taken suddenly ill with an attack of apoplexy, while at Huntsville. He went north for a few days hunting, when he was seized with the fatal illness, living only two hours. He was in his 52nd year. He graduated from Trinity Medical College

in 1871. For 22 years, he practised in Cannington, coming to Toronto 9 years ago. He was a member of the staff of the Toronto Western Hospital, and took a lively interest in its affairs. Dr. Hart was held in very high esteem by all who knew him. He leaves a widow and oneson.

DUNCAN McLARTY, M.D., L.R.C.P., Edin., M.R.C.S., Eng.

DR. McLARTY began practice in St. Thomas in 1869. He was a graduate of Victoria University, taken his degrees in 1867. He was educated in the Rolph Medical College. After obtaining his M.D. he spent nearly two years in Britain, where he passed the examinations for the L.R.C.P., Edin., and the M.R.C.S. Eng., diplomas. He was a resident physician for six months in St. Thomas Hospital, London. During the thirty-three years he practised his profession in St. Thomas, he took a very active interest in all its affairs. He was at different times a member of the School Board, of the City Council, was Mayor, and a member of the Board of Trade. He was also identified with a number of its business and financial institutions. Among other matters he took a very lively interest in the St. Thomas Hospital. He was a native of the Elgin County, being born in the Township of Southwold, in the year 1849. He was married, in 1882, to Miss Allan, of Port Rowan, who survives him, also one daughter and two sons.

It is a great word to say, but probably no one had as many friends in St. Thomas and district as had Dr. McLarty. In his case he chose the calling in life that eminently suited him. His splendid physique seemed to breathe health in every sick room, while his unflinching human sympathy and gentleness established easy confidence and secured the frankness so much required. He was of even temperament and marked self-control. His decision of character was both marked and unobtrusive. He possessed in a very high degree the power of keeping his own counsel, which secured for him the unbounded confidence of patients. And his skill rose to the level of his many other fine qualities. Day or night, rain or shine, however wearied with watching, driving, or loss of sleep, he ever responded to the call of the sufferer. His life's record is a monument of Parian marble, built on a foundation of granite, and on that monument are written, in letters of gold, the words: "He went about doing good."

BOOK REVIEWS.

ATLAS AND EPITOME OF OTOLOGY.

By Gustav Bruhl, M. D., of Berlin, with the collaboration of Prof. Dr. A. Potilzer, of Vienna. Authorized translation from the German. Edited by S. MacCuen Smith, M. D., Clinical Professor of Otology, Jefferson Medical College, Philadelphia. With 244 colored figures on 39 lithographic plates, and 99 text illustrations. Philadelphia and London: W. B. Saunders & Co., 1902. Price \$3.00.

THIS volume, like the others of the Medical Hand-Atlas Series, is beautifully illustrated and printed. The picture method of teaching and explaining a subject, as exhibited in this book, is perfectly charming. The descriptions, and treatment of diseased states are brief, but clear and intensely practical. The book, as a whole, is as perfect as it is possible to make it.

THE PUBLIC AND THE DOCTOR.

By a regular Physician. Published by Dr. B. E. Hadra Dallas, Texas.

THIS little volume which would easily go into your coat pocket, consisting of 150 pages, 16 mo., is truly a remarkable one. It covers the ground, in a most lucid and interesting manner, of the family doctor the specialist, the patient, the public, and the advertising "specialist." The remarks upon every topic are replete with sound advice and good judgment. We will only quote a few of sentences in the book. "A regular physician is one who holds to scientific principles; that is, one who stands upon the findings of untrammelled investigation, upon the outcome of unbiassed experience, and upon unprejudiced reason." "If we survey the history of medical science, we find that no medical discovery of any importance has ever been made, no new method of recognizing healing or preventing disease has ever been introduced; in short, that no real progress has been due to anything but to the efforts of true science." "Most amusing are the stories often heard about certain practitioners, that they were at their best when they were drunk; or that they know more when they are drunk, than all others when sober." "In your behavior toward the family physician do not forget that your relation is one of reciprocity. Do not expect him to discharge his part of the obligation whilst you consider yourself to have done your duty merely by choosing him." "We know of a woman who sitting next to her family doctor at a concert, during the performance of a Beethoven Symphony, pestered him the whole time with a description of her baby's summer complaint."

THE SCIENCE AND ART OF PRESCRIBING.

By E. H. Colbeck, B. A., M.D., M. R. C. P., D. P. H., and Arnold Chaplin, B. A., M. D., M. R. C. P. London: Henry Kimpton, 13 Furnival Street, E. C., 1902, price 5 shillings, net.

THE joint authors of this little work hold a number of important appointments in various hospitals and dispensaries; and have had a large experience in the subject they write upon. The first part of the book deals with the methods of prescribing, taking up the subjects of the prescription, incompatibility, and methods of administering drugs. The second part treats of the application of the methods of prescribing, and gives directions and formulæ for the various systems and organs. The book is full of useful information and excellent formulæ; and reflects great credit upon its authors. The publishers have got it up in most attractive form: Good paper, clearly printed, gilt edged, and bound in limp leather. The book is sure to be perused by many.

THE PHYSICIANS' VISITING LIST FOR 1903.

Fifty-Second year of its publication. Philadelphia: P. Blackeston's Son & Company, 1012 Walnut St. Toronto: Chandler Massey, Price \$1.00.

THIS little book is well known and needs but little introduction to the profession. It is got up in very attractive form, the best of paper being used, and bound in smooth, limp leather, with pocket flap and pencil slide. It contains a calendar for 1903, table of signs, incompatibility of drugs, poisoning, the metric system, table converting weights and measures into grams, dose table, asphyxia and apnoea, comparison of thermometers, a complete table for utero-gestation, and the blank ruled leaves for the various duties of a physician, as visits, appointments, vaccinations, etc. The book is very complete in every way, and will give entire satisfaction.

THE MEDICAL NEWS VISITING LIST FOR 1903.

Philadelphia and New York: Lea Brothers & Co. Price, \$1.25.

THIS book is got up in a nice pocket size, bound in stamped, limp leather, with pocket, pencil slide and flap. The paper is of fine quality. The contents of the book are: How to keep accounts, how to keep the visiting list, signs of dentition, to find day of confinement, thermometric scales, ordinary and metric weights and measures, comparative scales, examination of the urine, important incompatibles, artificial respiration, table of eruptive fevers, poison and antidotes, table of doses, therapeutic reminders, ligation of arteries with plate, and the exquisite blank sheets for the record of visits, engagements, vaccination, confinements, etc. We can confidently recommend this visiting list.

PRACTICAL OBSTETRICS.

A Text Book for Practitioners and Students. By Edward Reynolds, M.D., Visiting Surgeon to the Free Hospital for Women; Fellow of the American Gynecological Society; Of the Obstetrical Society of Boston, etc.; Formerly Instructor in Obstetrics in Harvard University and Senior Physician to the out-patients of the Boston Lying-in Hospital, and Franklin S. Newell, M.D., Assistant in Obstetrics and Gynecology in Harvard University, Physician to out patients of the Boston Lying-in Hospital, Assistant Visiting Physician to the Boston City Hospital, in the department of the Diseases of Women; Fellow of the Obstetrical Society of Boston, etc. Illustrated with 252 engravings and 3 colored plates. Lea Brothers & Co., Philadelphia and New York, 1902. Cloth, \$3.75 net.

THE object of this work is to present to the students a complete treatise on obstetrics, without unnecessary details or prolonged descriptions—a book complete in itself but not overburdened with notes and remarks on side issues. To obtain this result, the authors have, as a rule, described but one or two well recognized methods of procedure in a given operation, instead of placing a mass of literature before the student and allowing him to take his choice, after a lengthy discussion of the pros and cons. Again, in the opening chapters, where the anatomy of the female genitals is described, the authors rightly take it for granted that the student is acquainted with the subject, and hence only a brief *resumé* is attempted, leaving complicated details to works of anatomy, where they properly belong. Five chapters follow on pregnancy, treating of its diseases and complications, as well as of normal gestation, and all this before normal labour is mentioned. This arrangement is hardly an improvement on the usual plan, which treats of normal conditions first and then of pathological, and, although it may be convenient for reference, it is awkward for a student reading the subject for the first time. In the second part of the book, under the heading natural labor, the preparations and technique essential in routine obstetrical practice are well and briefly described, and the practical hints which are so frequently found throughout the book form a notable feature of this division of the work. The third part embraces obstetrical surgery in all its branches, including the induction of abortion and the use of the forceps. Abnormal labor is the heading of the fourth part, while part five is devoted to the pathology of labour. In the chapter devoted to eclampsia the immediate emptying of the uterus is advised, and the efficiency of Stroganoff's method is considered to be "not proven."

The puerperium is treated in the sixth and last division, and includes the care of premature infants as well as the various puerperal complications. The first chapter in this part is well worth reading, many hints are given which are frequently forgotten in the routine teaching of a lying-in hospital. The student too often assists at the delivery, and then

hears little about the subsequent course of events, and only in a few instances is able to follow the case until discharged. This chapter will not only give him the information required, but will put his mind in a proper attitude of expectancy ready to grasp the meaning of the various signs and symptoms as they appear. The book as a whole is modelled to some extent after Jewett, and most of the engravings and illustrations collected in that work have been utilized. Any that are original serve their purpose. The large plates are in every respect good.

The book is suitable for students, and for those who wish to have a good practical work on obstetrics, which takes up every necessary point in such a way that the reader can grasp one good method of procedure in each case, without wading through an endless sea of possible methods before coming to a decision.

A TEXT-BOOK OF HISTOLOGY AND MICROSCOPIC ANATOMY OF THE HUMAN BODY.

Including Microscopic Technique. By Dr. Ladislaus Szymonowicz, A. O., Professor of Histology and Embriology in the University of Lemberg. Translated and edited by John Bruce MacCallum, M.D., Johns Hopkins University, Baltimore. Illustrated with 277 engravings, including 57 plates in colours and monochrome. Lea Brothers & Co., Philadelphia and New York, 1902. Cloth, \$4.75 net.

THIS translation of Szymonowicz's work is designed to place before the English speaking instructors and students, a text-book which includes the best results of recent investigations, and to present these results in such a form as to enable them to be mastered in the easiest and most rational manner. In order to attain this end, special stress has been laid upon the development of organs and histogenesis of the tissues; and the fact is brought out, that, in many of these organs and tissues, it is possible to recognise structural units, which are repeated in a definite way and bound together by a characteristic framework. Once this idea is grasped, the student has a method at his disposal which will carry him through the whole subject and simplify it immensely.

The first part of the book describes the cell, including cell division and fertilization, and then proceeds to take up the elementary tissues, beginning with epithelium and ending with blood and lymph.

The second part deals with the microscopic anatomy of the various organs, and although nothing essentially new is pointed out, yet all the more recent views are presented in a very acceptable manner. The description of the viscera is clear, and the diagrams representing their systems of circulation and secretion in three dimensions are very helpful. It is impossible in a short review to mention more than a few of the excellent points in the work, but special attention might be drawn to the treatment of the mouth cavity. Under this heading, adequate space is

given to the mucous membranes, tongue, and glands, but the part referring to the histology and development of the teeth, is worthy of particular mention, both on account of the excellence of the description and the beauty of the illustrations. The nervous system is well treated, as far as it goes, particularly in regard to the nerve endings, but a mistake is the omission of a satisfactory description of the minute anatomy of the medulla. Certainly the general anatomy of the part is described, but no sections are shown. Now this part of the nervous system has been the *bête noir* of many a student, besides being one which has to be mastered, and there is a great field for a text book giving a complete and lucid description of the medulla and pons, profusely illustrated with suitable plates.

Following the account of the nervous system, is a complete description of the eye, ear, and other special sense organs, a chapter being devoted to the study of the skin as a tactile organ.

The final part of the work deals with microscopic technique, and gives a concise account of the methods of preparing tissues for staining and mounting.

The book is well printed in large type and on good paper with numerous illustrations and plates, executed in the best style. No pains have been spared to make it attractive, and a study of the text increases the good impression conveyed by a hasty glance. It will undoubtedly become a very popular text book and can be thoroughly recommended to students and instructors.

CLINICAL METHODS.

A guide to the Practical Study of Medicine. By Robert Hutchison, M. D., M. R. C. P., Assistant Physician to the London Hospital, and to the Hospital for Sick Children, Great Ormond Street; and Harry Rainy, M. A., F.R.C.P. Ed., F.R.S.E., University Tutor in Clinical Medicine, Royal Infirmary, Edinburgh; with upwards of 150 illustrations, and 8 colored plates. Fifth edition. Chicago: W. T. Keener & Co., 1902. Price, \$2.50 net.

THIS book is what its name would lead one to expect it to be. It is in every sense of the word a clinical manual. The book begins with an excellent chapter on case taking. Then follows chapters on the various systems and organs. The chapters on urinary, blood, and bacterial examinations are particularly good. The illustrations are well selected, and aid materially in making the text clear. For the student, who has made good use of Drs. Hutchison and Rainy's "Clinical Methods," the bedside examinations will have no terrors. We can recommend the book as an ideal one for all students of medicine. It is of a pocket size, and, while it contains 600 pages, it is not thick and bulky. It is well bound and printed.

PHYSICAL DIAGNOSIS OF DISEASES OF THE THORACIC AND ABDOMINAL ORGANS, A MANUAL FOR STUDENTS AND PHYSICIANS.

By Egbert LeFevre, M.D., Professor of Clinical Medicine and Associate Professor of Therapeutics in the University and Bellevue Hospital Medical College; Attending Physician to Bellevue and St. Luke's Hospitals; Consulting Physician to Beth-Israel Hospital; Member of New York Academy of Medicine. Illustrated with 74 Engravings and 12 Monochrome Plates. Lea Brothers & Co., Philadelphia and New York, 1902.

This is a handsome 12 mo. volume of 450 pages. It is got up in a most attractive form. The paper, type, and binding are all that could be desired. The publishers are to be congratulated on the excellency of the radiograph plates, illustrating the normal and diseased conditions of the heart and lungs, and the bronchi filled with fine shot. The other illustrations are good and effective.

The subject matter of the book is divided into regional anatomy, the respiratory system, the circulatory system, the abdominal organs, and examination with x-rays. The section on regional anatomy is brief, but well stated and useful, especially to the student. In addition to the usual chapters on inspection, percussion, auscultation, and palpation, there is much excellent advice in the diagnosis of diseases of the respiratory, circulatory, and abdominal organs.

The arrangement of the sections and subdivisions are such as to make the perusal of the book both easy and agreeable. While all portions of the work are exceptionally well written, we would specially mention that portion dealing with cardiac valvular diseases. The heart sounds, normal and abnormal, are often stumbling blocks to the student. Here we think they can have these matters cleared up perfectly.

SCUDDER'S TREATMENT OF FRACTURES.

Third Edition, Revised and Enlarged.

By Chas. L. Scudder, M. D., Assistant in Clinical and Operative Surgery, Harvard Medical School. Third Edition, revised and enlarged. Octavo, 480 pages, with 645 original illustrations. Philadelphia and London: W. B. Saunders & Co., 1902. Polished Buckram, \$4.50 net; Half Morocco, \$5.50 net. Toronto: J. A. Carveth & Co.

THIS book is intended to serve as a guide to the practitioner and student in the treatment of fractures of bones, being a practical statement of the generally recognized methods of dealing with fractures. The attention of the student is diverted from theories to the actual conditions that exist in fractured bones, and he is encouraged to determine for himself how to meet the conditions found in each individual case. Methods of treatment are described in minute detail, and the reader is

not only told, but is shown, how to apply apparatus, for as far as possible, all the details are illustrated. This elaborate and complete series of illustrations constitutes feature of the book. There are 645 of them, all from new and original drawings and reproduced in the highest style of art.

In this edition several new fractures have been described, and an excellent chapter on Gunshot Fractures of the long bones has been added. The reports of surgeons in the field during the recent wars have been carefully digested, and the important facts regarding fractures produced by the small caliber bullet have here been concisely presented. In many instances photographs have been substituted for drawings, and the uses of plaster-of-Paris as a splint material have been more fully illustrated. In its new form, the work fully maintains the deserved reputation already won.

From the artistic point of view, it would be impossible to imagine a more perfect book. The type is very clear, the illustrations are superior in every way, and the paper is of a very high quality. We can recommend this work most cordially to all who wish a work on fractures.

PUBLIC HEALTH AND PREVENTIVE MEDICINE.

By C. J. Lewis, M.D., D.Sc. (Public Health), Edin., Fellow of the Royal College of Physicians; Member of the Royal College of Surgeons; Lecturer on Public Health, Medical College for Women, Edinburgh; Examiner in Public Health, Royal College of Physicians, Edinburgh; Member of the Epidemiological Society of London; and Andrew Balfour, M. D., D. Sc., Edin., D. P. H., C. M. B., Fellow of the Royal Institute of Public Health; Member of the Epidemiological Society of London, Late Assistant Physician, City Hospital for Infectious Diseases, Edinburgh; and Civil Medical Officer, South African Field Force, Edinburgh; William Green and Son. 1902. Price 25 s.

IT is a great pleasure to be called upon to review such a volume as that of Drs. Lewis and Balfour; for it is both excellent in matter and superb in form. The publishers merit the highest praise for their enterprise in placing before their readers a work with so many features to commend it. We have here the acme of the book-maker's art. The work is a royal octavo one, of 658 pages, and well and attractively bound. The paper is of a superior quality, the type is clear, and the illustrations are most artistic in their execution and reproduction.

The colored plates will bear the closest and most critical inspection. As these plates deal with micro-organisms they are very valuable. In addition to the colored plates there are 189 figures throughout the text.

The subject matter of the book is treated of under the headings of Medicine, General Sanitation, Sanitary Engineering and Building Construction, Vital Statistics, and Sanitary Administration and Sanitary Law

The first section considers the communicable diseases under the classes of the epizootic, the non-epizootic, and other communicable diseases; the parasitic diseases, occupational diseases: diseases of alimentation, such as deficient, excess, injurious, diseased and contaminated foods. The communicable diseases are described under the headings of geographical distribution, etiology, description, symptoms, differential diagnosis, method of transmission, prevention of origin and spread. The facts in all cases are tersely and clearly stated, from the latest and most reliable sources. The portions of the work dealing with occupational diseases and diseases of alimentation contain a great deal of very useful information. The remarks on their prevention are particularly important.

The section of the work on general sanitation is both exhaustive and accurate. It passes under review meteorology, climate, air, soil, water, food, beverages, clothing, exercises, bathing, sewage, infection, disinfection, quarantine, isolation, vaccination, school hygiene, disposal of dead, offensive trades, smoke prevention. With regard to the smoke nuisance the statement is made that the causes are want of proper construction and adjustment between fire places and boilers, the deficiency of draught and improper construction of the flues leading to a chimney, inadequate height and capacity, and the carelessness of stoking and management in those entrusted with the charge of the fireplaces and boilers. These evils can be corrected by the admission of sufficient air for complete combustion the intimate contact of the air with the fuel, and the mixture of air and fuel must be kept for a sufficient time at an incandescent temperature.

In the chapters on sanitary engineering and building there is much valuable information on the construction of houses, public buildings, and hospitals, the remarks on the disposal of sewage being of special interest. The question of vital statistics is taken up in a very thorough and instructive manner. The marriage, birth, and death-rates are given. In the case of the death-rate, a lot of facts are placed before the reader on the percentage occurring at the different ages, in the different occupations, and from the different diseases. The diseases most frequently encountered in the various trades, occupations, and professions are tabulated. The work closes with a careful summary of sanitary administration and law.

After a thorough perusal of the volume, we have no hesitation in recommending it, as one of the most valuable works on the subject of Public Health and Preventive Medicine extant with which we are acquainted.

MISCELLANEOUS.

VIRCHOW'S CELL DOCTRINE IN PRACTICAL MEDICINE.

VIRCHOW gave birth to a theory which determined itself into indisputable fact. In direct scientific application to principle Antiphlogistine was constructed. The immediate factor essential for success was the reduction of inflammation. The Antiphlogistine (Denver Chemical Co.) does through the physical process of osmosis. Relief from pain occurs on diminished pressure of the congested tissue. Through the admixture of bland antiseptics the chemical irritation of the nerve ends is neutralized. In every way, chemical, physical and medicinal, Antiphlogistine re-establishes the stability of cell life, by acting upon and dispersing the mass of extravasated fluid. Absorption rapidly takes place through the relieved lymphatics. Antiphlogistine is a good medium to impart recuperative energy to the inflamed tissues.

SANMETTO IN GENITO-URINARY IRRITATIONS AND ATONIC SEXUAL CONDITIONS.

FLAVIUS J. KNIGHT, M. D., Charlotte, Mich., writes as follows:—
I have used Sanmetto very extensively in my practice for years, and am daily more and more convinced of its intrinsic merit in all genito-urinary irritations and atonic sexual conditions. It is my sheet anchor in urethritis, cystitis and chronic prostatitis. I shall continue its use in cases where it is indicated, and also enlarge upon the field of its exhibition as circumstances may suggest.

THE PREVENTIVE AND CURATIVE TREATMENT OF HAY FEVER.

THERE is increasing evidence that Adrenalin (Parke, Davis, & Co.) fully meets the indications as a remedial agent in hay fever. It controls the nasal discharge, allays congestion of the mucous membranes, and in that manner reduces the swelling of the turbinal tissues. As the nasal obstruction disappears, natural breathing is materially aided and the ungovernable desire to sneeze is mitigated. In short, a season of comparative comfort takes the place of the former condition of distress and unrest. Adrenalin blanches the mucous membrane by vigorously contracting the capillaries, and thus reduces local turgescence. It strengthens the heart and overcomes the sense of malaise so frequently a prominent feature in cases of long standing.

In the treatment of hay fever the Solution of Adrenalin Chloride should be used. This preparation is supplied in the strength of one part Adrenalin Chloride to one-thousand parts Normal Saline Solution, and is preserved by the addition of 0.5 per cent. Chlorotone. The 1-1000 solution should be diluted by the addition of four parts Normal Salt Solution, and sprayed into the nares with a "Cocaine" atomizer. In the office, the 1-1000 solution may be applied in full strength. A small pledget of cotton is wrapped about the end of an applicator and moistened with a few drops of the solution, 1-1000.

FOUR HUNDRED DOLLAR PRIZE.

DR. J. B. MATTISON, Medical Director, Brooklyn Home for Narcotic Inebriates, offers a prize of 400 dollars for the best paper on the subject :

DOES THE HABITUAL SUBDERMIC USE OF MORPHIA CAUSE ORGANIC DISEASE? IF SO WHAT?

Contest to be open two years from December 1, 1901, to any physician, in any language.

Award to be determined by a Committee: Dr. T. D. Crothers, Hartford, Conn., Editor Journal of Inebriety, Chairman; Dr. J. M. Van Cott, Prof. of Pathology, Long Island College Hospital, Brooklyn; and Dr. Wharton Sinkler, Neurologist to the State Asylum for the Chronic Insane, Philadelphia.

All papers to be in the hands of the Chairman, by or before 1 December, 1903; to become the property of the American Association for the Study and Cure of Inebriety, and to be published in such journals as the Committee may select.

SURGICAL USES OF BOVININE.

DR. PRICE, of Richmond, Maine, attaches much value to Bovinine in the treatment of ulcers, lacerations, carbuncles, etc.

FERROLEUM.

IN addition to the manufacturing establishment, and offices in this country, the Ferroleum Company have established offices at 86 Clerkenwell, London, E. C. This combination of cod liver oil and tonics is finding increasing favor with the medical profession, as one of the most valuable of remedies in wasting diseases.