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EDITORIAL.

THE NEW GENERAL HOSPITAL.

We have nothing but praise for every effort that will improve the hospital accommodation of Toronto, or any other city. The hospitals of Canada are one of her greatest assets. In these institutions thousands of our citizens are treated annually. These institutions are the means of gathering wealth and securing for our cities institutions that we are all proud of.

Hospitals come high both to build and maintain. The modern treatment of patients has added very much to the cost of caring for them. The buildings must be airy, sanitary, properly heated, with suitable sites, and they should be fire-proof. Then the nursing and feeding must be in keeping with what is known to be the proper methods.

Three years ago, a movement was set on foot for the erection of a new General Hospital. Aid was sought from the Ontario Government, from the city of Toronto, and from wealthy citizens. The Government and University on that occasion gave $300,000, and the city $200,000, and private donors about $1,100,000.

As the trustees went on in their work, it was found that the site cost $600,000 and the building and equipment $1,900,000, making a grand total of $2,500,000. The hospital trustees applied again to the university, and an arrangement was entered into whereby the university gives $300,000 more for certain uses of portions of the hospital site. This brought the total resources up to about $1,900,000.

The hospital trustees then approached the Toronto Board of Control and Council for another grant of $200,000, as an aid towards the final completion of the sum required. There will still be required about $400,000, which of course must be raised from private donations, or by debentures, or by the sale of some of the property belonging to the hospital trust in various parts of the city. Within the past few days Mr. J. C. Eaton gave $250,000.

When the hospital is completed, it will average about $5,000 per bed, as we gather that there will be about 500 beds in the institution. This does appear to us as too high, and some effort ought to be made to cut out all unnecessary detail. Hospitals should be very plain.

There is another feature that should be considered. The General Hospital owns valuable properties yielding about $35,000 a year in rentals. This would mean a capital value of perhaps $700,000. We think it would be proper to use some of this in the erection of the proposed new building.

One thing is very clear, that as the city and government are giving such a large portion of the funds, the hospital must leave an open door to any other college that may be formed in the future to teach medicine.

THE STATE CARE OF EPILEPTICS.

A short time ago, Dr. A. McKay, Member of the Ontario Legislature for North Oxford, stated in the House that he thought the government should take up the question of how to manage in the most satitsfactory manner the epileptic. This is a very important subject and should receive very careful consideration.

Dr. Edwin Bramwell, of Edinburgh, in an address which he gave a short time ago on the management of the Sane Epileptic, urged that they should be cared for in self-supporting colonies. There are now a number of these colonies, and the results have proven satisfactory from the therapeutic and financial aspects.

In the discussion which followed Dr. T. S. Clouston thought that the time was coming when the epileptic would be cared for by the State. He was strongly of the opinion these people should be removed from the general community, and their propagation prevented.

There can be no two opinions but that in the end this would be an economic move. These unfortunate sufferers could be so employed as to earn most if not all of the cost of their maintenance. To this would have to be added the very important fact that they would not be allowed to marry. In this way the future burdens on the people would be materially lessened. No one doubts the wisdom of the state providing institutions for the insane. There is equal good reason for similar places for the epileptics.

THE MEDICAL COUNCIL'S METHOD OF COLLECTING THE ANNUAL FEE.

An interesting item appeared in the public press a short time ago, that Dr. Jessop, of Lincoln, would move that the present method adopted by the Medical Council of dragging the medical practitioner into the police court as a means of collecting the annual fee of $2 would have to

cease. This movement is not taken any too soon. We have known of doctors being summoned to the police court. This is quite unnecessary and very degrading.

The Medical Council cannot learn too soon that it is there to serve the medical profession, and while it in one way governs that profession, it is in another sense the servant of that profession. It is from this latter standpoint that the council must really be viewed by the medical profession. It has become altogether too apparent of late that many members of the Medical Council have come to regard themselves as "bosses." This must be resisted.

We are quite certain that the Medical Council can find other ways of collecting the annual fee other than by resort to the police court. We have already stated that if the council would take proper care of its finances, there would be no need for the annual fee.

TYPHOID FEVER IN LARGE CITIES.

From time to time the public conscience is stirred by some epidemic. This has been the case lately in Montreal and Toronto with regard to typhoid fever.

Though it is admitted that at times the disease may be carried by flies, by dust, or soiled clothes, or foods, yet the fact remains that the main agency in conveying the disease is water.

This being the case, we state, what we have stated on more than one occasion, that a city is criminally guilty when it sells to its citizens a polluted water. The city, however, is the people and they have to be educated before they will undertake the expense of a proper water system.

Headway is being made in Toronto. There will soon be an up-to-date filtration plant. The trunk sewer will also add another strong line of defence to the lake water.

In Winnipeg there have been severe outbreaks of typhoid fever. These impelled action, and now that great city can speak with pride of what it is doing.

In Montreal we hope that the new council with such well-known doctors in it as Mayor Dr. Guerin, and Controller Dr. Lachapelle, something really praiseworthy will be done. One hundred deaths at the average age of 30, and each life, male and female averaged, worth $3,000, gives a loss of $300,000. Add to this all the expense in connection with those who recover, and the monetary loss is perhaps nearly doubled. These sums would go a long way towards installing the requisite water system.

In the case of Montreal there have been over 2,000 cases during the recent epidemic. Each case will cost in loss of time and necessary expen-

ses at least $200. This would give a grand bill of $400,000 for sickness account alone. Add on the death loss and the people of Montreal will begin to realize the vastness of the problem.

RABIES AND A PASTEUR INSTITUTE.

No private practitioner can successfully treat rabies. That it is a germ disease there is no doubt, and at times becomes epidemic. In Europe prior to the Pasteur treatment about 96 per cent. of those with rabies died, whereas now about 96 per cent. recover.

From time to time we read of Canadians who have to go to New York for treatment. This, we think, should not be allowed to continue. This country is large enough and wealthy enough to justify the establishment of a Pasteur Institute under State control.

To this any Canadian who might be unfortunate enough to be bitten, could betake himself. The institution ought not to be too great a burden upon the people. Many who would require treatment could well afford to pay for it; but even where they could not, it is the clear duty of the State to provide the means of proper treatment in such a disease as this.

With the recent order to shut up dogs or muzzle them, we are in full sympathy. There is no other known way of preventing the spread of this dread disease. Preventive medicine is now a definite science, and public men are coming to recognize the fact that the value of human life is more than all the other sources of wealth in a nation put together.

"GRAVE DANGER TO PROFESSIONS."

Such is the heading in large type to a breezy article which appeared a few days ago in the daily press.

The case was that of Mr. James Henry, who conducts the Painless Dental Parlors. He engages qualified dentists on a salary, and conducts the Dental Parlors as a business concern. Mr. Henry was fined in the police court. From this he appealed. The appeal was argued before Mr. Justice Meredith.

Mr. I. F. Hellmuth, K.C., who acted for the Dental College in prosecuting Mr. Henry, said before Mr. Meredith that "the big departmental stores might just as well start and employ lawyers and dentists on salaries to render professional services to their customers." To this Mr. Justice Meredith remarked "it might not hurt the public."

Mr. Hellmuth claimed that he wished to keep the case of the Royal Dental College on a high plane. Mr. Justice Meredith remarked "on the

high plane of a close corporation." Mr. Justice Maclaren asked if Mr. Henry could not comply with the law by making out a bill for use of parlors, appliances, material and professional services. Mr. E. F. B. Johnston, K.C., who defended Mr. Henry, thought he could; but said that Mr. Henry was also within the meaning of the Act because he supplied skilled and qualified dentists. Mr. Hellmuth held that "carrying on the business" "and practising the profession" were the same in the meaning of the Act.

Mr. Justile Meredith asked if Messrs. Gordon and Little, the dentists employed by Mr. Henry, "were not parctising their profession." "No," replied Mr. Hellmuth, "but merely a sordid trade." Mr. Hellmuth thought that the sign "Painless Dental Parlors" stood for Mr. Henry and that in this way he was inviting the public by pretending that he was a dentist. Mr. Justice Meredith thought the sign might stand for Messrs Gordon and Little.

The *Daily Star,* in its editorial on the case, remarked, "we are inclined to agree with Justice Meredith," and went on to state that a commercial concern might employ a first class lawyer and sell out his services to its customers to their advantage, as compared with services people might receive from an inferior lawyer employed on salary by a large law firm. The *Star* remarks that "Justice Meredith in saying 'on the high plane of a close corporation' put his finger on the crux of the whole matter. The so-called professions are so active in their zeal for the closed door against outsiders that they dread the very name of business. They want no untrained man to so much as lend his name to their firms."

Here is the opinion of a newspaper, which may be taken as a sort of type of others. In the foregoing quotation will be seen a grave error in reasoning, or an evident desire to be unfair. "The so-called professions," says the *Star,* "are so active in their zeal for the closed door against outsiders that they dread the very name of business." The professions, especially dentistry and medicine, are anxious for the closed door far more in the interest of the public than in their own. Then again the *Star* remarks "they want no untrained man to so much as lend his name to their firms." This is quite true and evidently proper. If the *Star* wished to be fair it would at once agree with the position that the practice of medicine and dentistry calls for very special training, and why should the untrained man come in to lend his name to a calling he does not know anything about.

We contend that the position of the *Star* is untenable. The honesty or the lack of it which the *Star* raises has nothing to do with the matter. We contend that a lawyer may accept a salary from a law firm, but not from a commercial firm where the intention is to retail his services to other people. In like manner we hold that a doctor or a dentist may

sell his time to a doctor or a dentist, but not to a capitalist when the latter is going to resell the services of these to his customers. It is entirely unprofessional for any doctor or dentist to place himself in the hands of a moneymaker to do his bidding and attend such cases as he may send them. It is quite proper for a lawyer, a doctor, or a dentist to accept a salary to do the work of any person or firm, but not to have their services resold for gain to their employers. Mr. Hellmuth thought that when professionals are employed in this way they are not following their proper calling, "but merely a sordid trade."

This is what it is coming to. If professional men will not maintain their true place in life, they may expect that the public will lose respect for them. If a lawyer, or a doctor, or a dentist hires himself out to any one to be made do the bidding of his employer, he is on a par with the journeyman at the bench, who takes a day's pay and allows the employer to take the profit.

That certain judges speak from the throne of the bench in a certain way counts for very little. Judges have been known to be very ignorant of medical or dental affairs. They have been known to be ardent homoeopathists, or Christian scientists, etc., or to follow after some faith-curist. When this is notoriously the case, why expect so much wisdom from the bench? We once remember a well-known judge condemn in court a surgeon for inserting a drainage tube in a wound after he had removed a foreign body from the part. The judge made a remark like this "that it was surely the height of folly to insert one foreign body after having just removed another!"

The moral is that the learned professions need not expect too much from the learned law lords on the bench. To the sciences of medicine and dentistry they may be quite ignorant laymen. Then, again, the medical and dental professions do not advertise enough to secure the support of the press.

THE LEAGUE FOR PHYSICAL EDUCATION.

Some four years ago there was formed in Great Britain a league for the promotion of physical culture and training. At the present moment the Bishop of Ripon is President, and among the Vice-Presidents we find the names of Sir I. Clifford Allbutt, Sir Lander Brunton, Professor Clouston, Sir Henry Craik, Sir Thomas R. Fraser, Dr. Leslie Mackenzie, Professor Osler, Sir William Turner, Sir William Thompson, and Sir John Batty Tuke.

The objects of the League are to promote the physical improvement of the people, to extend agencies already existing for this purpose, to

make known the legal powers of public bodies, and to secure fresh legislation looking towards the healthful exercise of the people.

The League has already published a number of leaflets which have had a very wide circulation, and are doing much towards the public on several important subjects.

Many branches of the League have been formed in towns and cities. Of the subjects discussed by the leaflets we may mention "Health Visiting," "Infantile Mortality," "A plea for School Clinics," "How to bring up a baby," etc.

The League, for physical education, has already done much good, and much may be hoped from it in the future.

THE PURITY OF OUR RIVERS.

It is a sign of better days to note that the health committee of the Senate of Canada is moving in the direction of preserving the rivers and streams of the country from pollution. The following item of news comes from Ottawa by the press despatches.

"The Senate Committee on Health, which has had under consideration the question of the pollution of streams, recommended to the Senate that the only remedy for the prevailing dangerous practice of municipalities in disposing of sewage by draining it into the lakes, rivers and streams of the country, lies in the passing of prohibitory or controlling legislation. The committee finds that this only can be brought about by co-operation between the Provincial and Dominion Governments, and it therefore recommended that the Conservation Commission takes steps to call together the health authorities of each Province, to meet in conference at an early date, and endeavor to devise some uniform legislation to remedy the present evils."

The Provincial Governments should join hands with the Dominion Government in placing on the statute book such acts as will prevent the pouring of all sorts of filth into the streams of the country. It has cost the municipalities some outlay to properly treat their sewage, but then there would be the gain in health of the people, which would more than offset the cost.

We remember seeing a very pretty stream that was rendered filthy for miles because a cheese factory poured its refuse into it. A little care and outlay would have found a proper method of destroying this waste material. This is only an instance of many.

We know of an attractive town through which flows what would be a clean and attractive stream. A short distance above the town there is a dyeworks which empties an immense quantity of dirt into the stream.

Below the town there is a tannery. From this there is also much impurity thrown into the stream. These things should not be.

The health commission of the United States sometime ago made the statement that the people of that country are worth from four to five times as much as all the material sources of wealth in it. In dollars and cents the people count for something.

MR. J. C. EATON'S SPLENDID EXAMPLE.

Mr. J. C. Eaton is the President of the T. Eaton Company. It is well known that he enjoys a large income from his connection with the business, but large incomes do not always make men generous.

We are glad to be able to record the fact that Mr. J. C. Eaton has given the magnificent sum of $250,000—a quarter of a million! He has given his money in a good cause.

The new General Hospital is to contain about 440 public ward beds and about 100 private and semi-private wards. This gift will enable the trustees to go ahead with the building at an early date. Mr. Eaton's gift is for the surgical wing, which is to contain 130 beds. There will also be fully equipped operating rooms.

The whole hospital situation of Toronto is rapidly improving. It is a notorious fact that the hospitals of Toronto are about the poorest things in any great city in the world. But better days are at hand. The wealthy have been touched as never before, and the public, represented by the city and the government, has given freely.

Apart from the New General, the other hospitals in Toronto are busy gathering money and building. The day is at hand when patients will be housed in a way that is both sanitary and safe. The city will soon have seen the end of the fire trap.

THE TORONTO GENERAL HOSPITAL EX-HOUSE STAFF BANQUET.

The ex-house officers of the Toronto General Hospital, of which there are now nearly three hundred, will hold their Annual Banquet at the King Edward Hotel, on Easter Monday evening. Dr. Roland Hill, of St. Louis, will deliver the scientific address, following which the usual toasts will be drunk.

It is expected that the first presentation of the gold headed cane will take place. This has been awarded to Dr. Thos. Cullen, of Baltimore, who was considered to have made the best contribution of any ex-house officer to medical literature last year.

ORIGINAL CONTRIBUTIONS.

THE BORDERLAND OF MEDICINE AND SURGERY.*

By MAURICE H. RICHARDSON, M.D.,
Moseley Professor of Surgery, Harvard University.

IN selecting a subject of interest to physicians as well as to surgeons, to specialists as well as to general practitioners, none seemed more suitable than that of the relations between the different bodies of clinical workers. In dealing with this subject we have to consider the borderland which separates the fields of medicine, surgery, and the specialties. My address, therefore, concerns chiefly those whose work is practical rather than theoretical, at the bedside rather than in the laboratory. Not that I would leave out of consideration the laboratory, for there better than anywhere else can be tested the results of clinical work; but what I have to say deals chiefly with the selection of methods of treatment in groups of diseases; with the results of these different methods; and with such deductions as I have been able to draw from many years' experience, at the bedside and in the operating-room.

The progress of medicine and surgery since I entered the Harvard Medical School has been, of course, prodigious. I have been permitted to see for myself that wonderful advance of medicine and surgery which has made our profession brilliant among human occupations. I have seen with my own eyes what the late Henry I. Bowditch used to say he wished he might live to see with his: the marvellous strides which were made in the last part of the nineteenth century in the fight against disease. The field of medicine has been freely invaded by surgery, until it has seemed that perhaps nothing would be left for medicine. The line of attack has advanced and retreated, retreated and advanced, but the ground gained by surgery has always been greater than that lost, until the borderline between medicine and surgery has been carried far into what was once the domain of medicine.

It is well for us at times to pause and consider, not only the things that we have accomplished, but the things that we have failed in; to take account of stock and to open a fresh ledger; to balance old accounts and to start new ones; to claim as surgeons the achievements of surgery, but to admit as candid and fair-minded men our failures and disappointments, and, in thus admitting our failures, to strive with our medical confrères to indicate the lines along which progress is to be made.

Our duty to our students and to our readers is to present an impartial account of our work, and particularly of our failures, lest they find, when they first encounter the responsibilities of practice results very dif-

*An address delivered before the Academy of Medicine, Toronto, January 4, 1910.

ferent from what they have been led to expect. We must teach young men exactly what difficulties they themselves will meet with, lest, in seeing failures where they were led to look for successes, in meeting disaster where they anticipated victory, they become unduly discouraged.

In ourselves as teachers we must remember, on the other hand, that failures are more depressing than successes and more lasting in the memory. We must, therefore, strive lest we become too pessimistic as our experience increases. Indeed, if we should go on living and practising indefinitely. I sometimes think that by the time we were as old as Methuselah, we should, under the accumulated disasters of centuries of experience, come to a standstill, and be afraid to undertake even the simplest case.

But if we cannot transmit to others our experience in full, so that they can take up the burden just as we leave it and with the ripe experience of our years, we can endeavor to transmit at least those principles which our experience has established. Then, with such precepts and warnings as we may be able to impress upon them, young men—eager, enthusiastic, and hopeful—will be all the better able to learn in the dear school of their own experience.

I am led, therefore, on every favorable occasion to speak on subjects of clinical interest, and to reflect in my addresses the style of teaching which I believe to be of value in the shaping the student's views of his profession. Our object is, first, to make faithful, truthful, sound, and skilful healers of the sick.

Dr. Oliver Wendell Holmes, in his delightful essay on "Scholastic and Bedside Teaching," gives expression to eternal truths in medical education. They guided instruction at Harvard in 1865. They still guide it in 1909. "The most essential part of a student's instruction," he said, "is obtained, as I believe, not in the lecture-room, but at the bedside." ("Scholastic and Bedside Teaching.")

"I am in little danger of understating anatomy and physiology, but as each of these branches splits up into specialties any one of which may take up a scientific lifetime, I would have them taught with a certain judgment and reserve, so that they shall not crowd the more immediately practical branches." . . . "The bedside is always the true centre of medical teaching." . . . "We are continually appealing to special facts" (of experience). "We are willing to give Liebig's artificial milk when we cannot do better, but we watch the child anxiously whose wet-nurse is a chemist's pipkin. A pair of substantial mammary glands has the advantage over the two hemispheres of the most learned professor's brain, in the art of compounding a nutritious fluid for infants." . . . "The humble beginner who is alarmed at the vast fields of knowledge opened to him may be encouraged by the assurance that with a very

slender provision of science in distinction from practical skill, he may be a useful and acceptable member of the profession to which the health of the community is entrusted."

On November 6, 1861, Oliver Wendell Holmes delivered an introductory lecture to the incoming class at the Harvard Medical School on "Border Lines in Medical Sciences." "Science," he said, "is the topography of ignorance. From a few elevated points we triangulate vast spaces, inclosing infinite unknown details." . . . "The best part of our knowledge is that which teaches us where knowledge leaves off and ignorance begins."

From this point of view Dr. Holmes considered the border line of progress between the known and the unknown. Dr. Fitz a few years ago delivered an admirable address on the "Border Line Between Medicine and Surgery" considered from the point of view of the historian and physician. In this address he considered not so much the interval separating truth from ignorance as the border line case between the surgeon and the physician.

My effort is a consideration of the patient as viewed by the surgeon rather than by the physician; a consideration of the patient for his own best interests from the standpoint of proved truth as admitted by he physician from his side of the borderline and by the surgeon from his. Our greatest endeavor should be to approach the borderline between ignorance and knowledge with a full realization of the limitations of our knowledge. In the past, surely, the borderline between medicine and surgery has been that between demonstrated truth and demonstrated ignorance; and the best part of our knowledge has been that which, as Holmes says, has taught us "where knowledge ends and where ignorance begins." We consider the patient's best interests in the light of established facts, and are, therefore, at the borderline of progress, restrained by our ignorance of what exists beyond that line. And is it not true that the borderline between medicine and surgery is the borderline of ignorance? I do not mean the ignorance of medicine or the ignorance of surgery as to what in the borderline pertains to each, but rather the ignorance of those vast fields which lie beyond the possibility even of an imagination. In those fields we must necessarily explore with extreme care, making sure of one step before taking another, and, with each advance, considering the difficulties and dangers of the next.

My teaching at the bedside has been, the past few years, a delightful experience, in that I have been able to hold, with Fitz, what are called borderland clinics—he presenting the medical side and I the surgical. With the retirement of Fitz last year, Richard Cabot and I have taken up the fight which has been interesting and inspiriting to the students and to ourselves. Moreover, it has been of incalculable value to the

patient. These clinics have been largely made up of abdominal cases, because the abdomen is the region wherein lies chiefly the borderland. Any inaccessible region, however, is a borderland one, because it is the inaccessibility of the disease that makes diagnosis difficult, and when diagnosis is difficult or impossible the necessity for operation is masked in the uncertainties of recognition.

There would be no borderland case, I am convinced, were the exact condition as demonstrable at the bedside as it is in the autopsy room. From this point of view there is no borderline case. Each lesion would be clearly mechanical, relievable or not. But, if mechanically relievable, there might well be a difference of opinion between surgeons and physicians as to the matter of surgical treatment.

From another point of view there is a distinct difference of opinion as to the comparative benefits of medicine and surgery. The stomach provides a borderland, and gastric ulcer a borderline in this class of cases.

A third point of view is that from which is considered the treatment, by palliative operations, of such diseases as cancer of the oesophagus, intestine, rectum, brain, and spinal cord.

And there is still a fourth point of view, that of certain diseases in which environment and hygiene play an important part. Such, for example, are tuberculosis of the kidney, of the peritoneum, and the like, in which operations present grave immediate risks, with at best somewhat doubtful prognosis, whereas medicine is safe though not radical.

With increasing experience I have realized more and more the importance of prognosis. Prognosis in most human occupations is the vitally important element guiding action. Upon prognosis depends decision. When prognosis is sure, decision is sure; when prognosis is uncertain, decision is uncertain. Hence in the majority of cases prognosis means decision.

But in the borderland case prognosis does not always mean decision, even if the prognosis is sure, for even when we know the outcome of disease, the best treatment, whether medical or surgical, palliative or radical, is debatable. This is one of the important considerations under my title.

For example, take cancer of the rectum or of the sigmoid flexure, in which the prognosis is even the most favorable cases is bad—the question of relieving obstruction by an artificial anus, or not, is debatable. Some patients would prefer to die at once rather than endure for a few months a living death; others would cling to every hour of life, no matter how agonizing. Some physicians look upon the attempted prolongation of life under such conditions as unwise; others regard life as so precious as to justify prolongation of its spark to the last second.

In a wise decision of such a question, it seems to me that there is much to be said on both sides, but the most telling evidence comes from the patient. The question may, however, be decided by the physician or the surgeon. The chief element of decision is the prognosis.

To illustrate my meaning of the value of prognosis, take this specific case—cancer of the sigmoid flexure or rectum, with intestinal obstruction. Experience and knowledge make prediction reliable. In a very small percentage of cases, radical cure is shown by knowledge to be possible. Actual experience in radical operations upon these cases has shown the surgeon the hopes and limitations of his proposed operation. He can make by his examination under anaesthesia a pretty sure prediction of the outcome of a radical operation. He can do this often even without an anaesthetic. He can say, for example, "A radical operation in this case is of no real use;" or he may say, "There is a good chance of radical and permanent cure—one chance in ten, for instance." Unfortunately, in a deplorable percentage of cases, he must say, "There is no chance of permanent cure; the only possible relief is by an artificial anus. The dangers in this palliative operation are not great. You can learn to take such care of the anus that it will not trouble you excessively, nor will it be very offensive. You will have two or three years—perhaps more—of tolerable life, and then there will be very little pain or other suffering."

Such a prognosis the surgeon, relying on experience, will be able to give. Furthermore, he will be able to say, with truth, that death from chronic intestinal obstruction is one of the most dreadful forms of death; the pain is excessive and alone demands relief; faecal vomiting is far beyond any other form of human agony. Of the advisability of the artificial anus, which relieves pain, prevents faecal vomiting, prolongs life, and permits productive work, there would seem to be no question, and, between the wisdom of surgical and of palliative treatment, no possible doubt.

But there is doubt and difference of opinion. I have heard commended strongly the wisdom of that patient who, under the horrors of rectal cancer, submits to the deadening influence of narcotics until death comes to his relief. This seems to me indeed a living death.

The point of view of the patient varies, I think, with his intelligence. Occupation, environment, riches are of importance, we should say, as making life endurable, not to say enjoyable, for we can hardly imagine a life worth living, to a refined patient, with a neglected and filthy abdominal anus, offensive to himself and to everybody else, and preventing employment and social intercourse. But the restored capacity for productive work gives, through intelligence, evidence strongly favoring the palliative operation.

I do not refer to inoffensive palliative measures so much as to the offensive—to gastrostomies for stricture of the oesophagus so much as to enterostomies for stricture of the intestine. The former, if troublesome, are not foul-smelling and offensive.

The late Prof. ———, of Amherst College, shortly before his death, told me, after two years of an artificial anus, that these two years had been filled with enjoyable life; that he had been able to do good work; and that he had been a comfort to his family.

Another instructive example was that of Mr. ———, who kept a market in Providence. This patient was able for several years to attend personally to his business; and, it will be remarked that in a market, of all places, the artificial anus is the most undesirable thing possible.

My friend ——— for several years has spent most of his time at the ——— Club. No one ever knew, or knows, that he is carrying the burden of a colostomy.

Evidence has been brought by those who oppose these operations prolonging life at the expense of cleanliness and perhaps of comfort, that they are not worth while, and that the patient had better be left to die; that euthanasia under morphia is the physician's duty. Many chapters could be written under this theme. That hopeless disease is, from its hopelessness, medical and not surgical. I will not admit; but that it is best treated now by palliation and now by operation, there is in my mind no doubt. I would have said that there was no doubt in any mind, from the facts of experience; but I have found at many consultations physicians who advise against prolonging life, with an artificial anus in rectal cancer, or with a gastrostomy in oesophageal cancer.

The scope of my essay does not include an exhaustive consideration of this theme, but its practical importance is great.

Prognosis depends upon many things. It rests upon a broader foundation than diagnosis, in that it includes diagnosis. The diagnosis is based upon many things, but it does not include many other things which affect prognosis.

Nor is prognosis the only element of decision for or against certain kinds of treatment, medical or surgical. Prognosis is affected by environment, for example, though diagnosis is not. Treatment is affected by diagnosis and prognosis, and certain attributes of the patient, friends, family; its effect upon the community, upon other patients, upon the art of surgery.

There are many cases which come up to illustrate my meaning. Cancer of the rectum, for instance, so extensive as to preclude an attempt at radical cure, does not justify prolongation of life at the expense of an artificial anus in a crowded tenement among the poor, when it might among the well-to-do. Such a view as that just expressed is, however,

far from defensible. Why is it assumed that life to a poor man in a crowded tenement is not as sweet as to the rich man in his palace?

Attempted extirpation of extensive disease of the stomach, with a grave prognosis, in which there are but few chances of immediate recovery and still less of permanent recovery, hurts surgery in the community: it has an evil effect upon other patients and it hurts the art of surgery. Under such circumstances it is necessary for us to protect from procedures so unreasonable as these, the patient, the friends, the community, and the art of surgery, even if the patient himself is clamoring for operation, because he does not know as well as we do what, on the whole, is best for him. He does not realize that his last state will be vastly worse than his first.

But it is hard for a hopeful and enthusiastic surgeon, especially in the beginning of his career, tamely to yield to an aggressive foe; we cannot learn always by the experience of others, and it is a pity that we cannot. Franklin says, "Experience keeps a dear school, but fools can learn in no other, and scarcely in that." Yet it is just that experience and hope which makes most for progress. Had I in my younger days heeded the warnings of R. M. Hodges, I should have given up all hope in operating for cancer, for he had himself been led to the gloomiest prognostications.

The line of demarcation in 1875 between medicine, surgery, and the specialties was very sharply defined; between medicine and surgery it was especially clear. At that time surgery included the modern specialties of orthopedics, gynecology, and genito-urinary diseases. Orthopedics meant club-foot chiefly; gynecology, ruptured perineum; and genito-urinary diseases meant clap, syphilis, stricture, and stone in the bladder.

Bigelow did all these things, more or less, as well as operations on the eye. His chief pleasure was in genito-urinary surgery, and his influence first stimulated in Boston our best specialists in genito-urinary diseases. We had no idea what G. U. would mean, or what gynecology would claim. We little thought that the time would come when kidneys would be extirpated, or extra-uterine pregnancy diagnosticated and remedied. What the surgeons of that time would have said of the specialty of gynecology, we cannot even guess. Indeed, at the present time it would be hard to say, when we are called, as I have been, by a gynecologist, to help decide between a paratyphoid fever and an appendicitis in a male!

In 1875, however, the visiting surgeons at the Massachusetts General Hospital had to do everything. The operation for club foot was a common one. To this day, gynecology is done by the staff, medical and surgical.

In many ways this simplicity of assignment of everything to the physician, to the surgeon, or to the then established specialties of eye, ear, throat, skin, and nervous diseases was commendable. I am not so sure that we should commend even now the splitting up of general surgery into specialties that are not practised by specialists—into highly specialized groupings presided over by general surgeons.

Bigelow was a surgeon with a predilection for genito-urinary work; Cabot, a general surgeon who enjoyed the gynecology of that day. Porter was more at home in hare-lip, cleft palate, and in fine plastic workmanship.

To-day this arrangement of cases which demand special skill is admirable, provided that in a hospital staff certain unusual diseases are all referred to one or two men who take special interest in them. But it is to my mind a question whether a great specialty can be best practised by one who does not devote his whole time to it.

The genito-urinary specialty includes diseases of the kidney like stone and neoplasms, just as gynecology takes in the diseases of the female pelvis. But no surgeon is fitted to open the abdomen unless he knows the surgery of the kidney and of the pelvis, as well as of every other possible abdominal lesion. Furthermore, a specialist is not a specialist if he is also a general man, whether in medicine or surgery.

The borderland in 1875 was, broadly speaking, the human anatomy separating the accessible from the inaccessible anatomical regions. Surgical diagnosis was, therefore, the recognition of external pathology—of diseases and conditions that could be tested by the senses.

The great advance in surgery which safety of operation has made rapid, is not due altogether to safety either. It has been partly the result of improved diagnosis, so that the surgeon could foresee what problem was before him.

The real reason why abdominal surgery was so slow in starting was the danger of it. Those of us who think that modern surgery is really modern must remember that "There is no new thing under the sun" (Eccl. 1 :9). Had it been possible safely to perform even what are now regarded as the simplest abdominal operations, there was not wanting the skill to perform them. Indeed, I do not believe that we see to-day the skill, rapidity and anatomical knowledge which made the brilliant operators of preanaesthetic days. I have read the details as to operations of that time, told by Warren in 1828 in the *Boston Medical and Surgical Journal,* and I do not believe that the leisurely methods of to-day, under anaesthesia, can possibly educate the modern surgeon to such a high degree of swiftness and skill. Surgeons of that day, however, did perform some of the difficult operations of to-day. In 1828-30, in the *Boston Medical and Surgical Journal,* were published descriptions of vaginal

hysterectomy by a method which I fondly thought original with myself. But, after all, it was the dreadful mortality of those early operations which kept back the borderline skirmishers for so many years. Not that external surgery was so very safe, when it was thought that inflammation was essential to repair. I well remember the explanation of my chief that the lipomata always suppurated, though the operation was usually very speedy. This suppuration, he said, was due to the loose connective tissue capsule of the lipoma.

I am often asked by young men whether I advise them to take a medical or a surgical service in a hospital—by young men who are in doubt whether they will undertake medicine, surgery, or general practice. I dare say that many physicians are asked the same question. My reply is that, on the whole, a man will get a broader training in a surgical service than he will in a medical one, because he will get surgery—itself now a very broad field—and he will get a certain amount of medicine also, especially cases of pneumonia and other post-operative complications. Moreover, he will see in the surgical wards patients with many diseases essentially medical, especially abdominal. He will get also a surgical training in abdominal diagnosis, which I think it more effective than the medical training in diagnosis, because he will see in the operative cases at least the connection between cause and effect and the demonstration of the mechanical causes of symptoms. He will have the inestimable advantage of control over his diagnosis.

At a recent borderland clinic, between Richard Cabot and myself, there were brought from the medical wards six cases of supposed tubercular peritonitis. The diagnosis was disputed by the surgeon in three. All were operated upon, and three only were tuberculosis—the honors were even. But the good to the patient, to the assistants, and to the chiefs, was great, because each patient had the benefit of a wide experience, both medical and surgical; each assistant saw the reasons for or against the symptoms put to the final test, and saw, therefore, most vividly the error or the truth; and, finally, the chiefs beheld, in unquestionable demonstration, the accuracy or falsity of their observations, the reliability of their conclusions, and the real value of their experience.

Now the assistants, both medical and surgical, see such demonstration in a combined clinic, but they do not, as a rule, see transferred cases. Medical men make their diagnosis, and that is the end of it. To be sure, surgeons, in transferring their patients to the medical side, lose track of them, and they never know the facts unless the patient dies.

A knowledge of surgery can be gained only in a hospital; a working knowledge of medicine can be picked up in practice. Furthermore, a surgical service gives a man, it seems to me, a better preparation for general practice, because it is so filled with sudden and unexpected emergen-

cies that the student learns quickly self-possession and self-reliance. Not that there are lacking abundant opportunities for the medical interne to learn surgery, but the young men are so overwhelmed with their own work that they have little time to follow the work of their colleagues. I have often thought that the best service is the all-round service in a small hospital, where one sees medicine, surgery, obstetrics, and the specialties. The objection to this is, of course, that in none can he get highly specialized teaching.

One of the great satisfactions of my professional work has been the realization that I have lived through these wonderful advancements that our profession has made since I was a student. Thirty years ago there was no borderland between medicine and surgery; or, if there was, it was almost too narrow to be recognizable. The least invasion of medicine was enough at times to raise a storm of protest. Henry I. Bowditch met with tremendous opposition in first performing thoracentesis for pleurisy. To be sure, this procedure, though seemingly a very simple operation, had, and has to this day, dangers of the gravest sort, when performed by one ignorant of the far-reaching effect of emptying, under atmospheric pressure, a rigid cavity, the viscera of which have been violently displaced by one-sided pleural effusions. But apparently the operation was of the simplest sort. It was not a violent overstepping of the borderline, like McDowell's ovariotomy; but it was nevertheless a surgical operation encroaching upon the domain of medicine. And yet I do not believe that the opposition to the aspirating needle was jealousy. It was that conservatism which is characteristic of our profession, and which is one of our best attributes when not carried to bigotry and intolerance. Even to-day we meet just such opposition in the invasion of new fields, and to justify such invasion we must show to our opponents that progress is real and justified by its benefits to the patient. It is the expression of a determined minority—the crystallization of opposition which, when overcome by the truth, makes that truth conspicuous and beneficial.

In 1875, the borderland was, as I say, a clearly defined one, from the nature of external pathology. Its extension to where it is to-day became a problem of safety. Safety in the first expansion was owing entirely to Lister; safety to-day is owing to technical skill and to a knowledge of pathology. Progress at first was owing to anesthesia; later, to asepsis through bacteriology; to-day further expansion goes hand in hand with physiology. An intimate knowledge of anatomy, with mechanical skill, was, up to 1846, the surgeon's great reliance. To-day, through good asepsis, even the most bungling operations are usually successful; and a bungler, that in the old days would not have been tolerated a moment, now invades with confidence the most forbidding areas. Moreover, while

he is doing it, he is watched by the physician with a complacency which is—to those who know skill from the want of it—extraordinary.

Fortunately, as I say, a familiarity with bacteriology makes possible, through asepsis and the *vis medicatrix naturae,* the healing of almost any wound. And the difference in results between the good and the bad operator, in the average ease, is not very great. And yet I suppose that in such an operation as that for chronic appendicitis there is a difference of from three to five per cent. in mortality, or from no mortality to five per cent.

In operations of great magnitude and difficult dissections in dangerous anatomical surroundings—like the removal of the uterus from between the bladder, rectum, and ureters, or the common duct stone from between the portal vein and the inferior cava, the duodenum, and the pancreas—swiftness and precision in dissecting make all the difference in the world.

For some reason, and probably a sound one, though I am unable to see it, an intimate knowledge of anatomy is not now regarded as essential for the surgeon. We have indeed drifted far from the old days, when the student had on the tongue's end and in his mind's eye, the great and important facts of surgical anatomy.

It seems to me that the anatomy of the neck is simplicity itself, compared with that of the parts about the Foramen of Winslow or the uterine cervix, and that familiarity with the ureters is vastly more important than familiarity with the recurrent laryngeal nerve. And yet the man who does not hesitate to remove a uterus will shrink from a thyroidectomy, a deep dissection of the subclavian triangle, or an excision of the sternum and first rib.

If it has been a great satisfaction to me to live through the wonderful progress of medicine, it has been a chagrin to see the gradual disappearance of the skilled anatomist and the brilliant dissector. But I have little doubt that the pendulum will again swing toward the old ideas, abandoning some at least of the new, and to the advantage, I am sure, of surgery as a technical art.

There is one theme upon which the surgeon is continually harping, and upon which I now must say a word of warning. And I say it, not in the aggressive, know-it-all way, without giving the other man the credit either of wisdom or experience, but with the full consciousness of my own imperfections in diagnosis and in prognosis. This theme is the *importance of early and precise prognosis.* I am not unaware, of course, that prognosis is always difficult. What saith the preacher? "A wise man's heart discerneth both time and judgment. Because to every purpose there is time and judgment, therefore the misery of man is great

upon him. For he knoweth not that which shall be: for who can tell him when it shall be." (Eccl. viii., 5-7.)

The suffering of patients is great upon them unless time and judgment (diagnosis and prognosis) are wisely discerned.

What I have seen in the development of abdominal, and, for that matter, cerebral surgery, has been the opposition, first, of the majority and then of the minority to early surgery in the borderland case. And I have been myself one of the hesitating majority. I well remember the rules which I laid down, definitely and forcibly, and based upon a small experience, as to the selection of cases in appendicitis—this one for operation; that one for palliation. And have I learned wisdom as to time and judgment? A little, I hope, but not all there is to learn. As I write these words, I fear evil tidings from a patient with acute appendicitis, in whose case operation was delayed by the physician from Friday to Monday night, and by myself over Monday night to Tuesday noon. To be sure, the patient had had many attacks from which she had recovered. None as severe as this, however. She was 58 years of age, and stout—a bad subject for operation, as well as a bad one for the disease unoperated upon. And I hoped for the opportunity to remove the appendix in a period of quiescence. It was the same old story—trivial constitutional disturbance, low white count (11,000), but marked local tenderness, with distention. The operation showed an inflamed and thickened appendix, with odorless pus. I dare say that this patient will do well, and that the delay of a night in so mild a case has made no difference. Nevertheless, prognosis was at fault.*

Now, in this very recent case, an accurate *prognosis* was the one indispensable deduction to be desired. The physician's diagnosis was accurate; but his favorable prognosis was a matter rather of hope than of expectation. The wish was father to the thought, as indeed was my own in waiting over night. The *real* reason for delay lies in the hope that things are not so bad as they seem.

The same natural hope is seen to-day in the objections which many have to the removal of gallstones that are but slightly offending. The chief support of these objections lies in the reports of the autopsy-table, where have been found so many gallstones which have never given a sign. But the surgeon is impressed by the evils of gallstones in advanced cases, and the higher mortality in such cases is owing to delay. I am impressed, besides, in family histories, by the frequency of deaths from gallstones, when I enquire specifically for the cause of death in each member of the immediate family.

As a matter of fact, we know the prognosis of every pathological lesion, and we know it well enough to say what the chances are. We

*NOTE.—This patient made a good recovery.

know that it is either certain or uncertain. The prognosis of cancer of the stomach is certainly bad; that of gallstones certainly doubtful. Prognosis is good, bad, or doubtful, according to many and varied circumstances, as we all know. Do we know diagnosis well enough? Are the uncertainties of diagnosis and those of prognosis enough for a wise decision as to "time and judgment?" Is not this a topic that it is well to dilate upon in connection with the disease claimed as theirs by both physician and surgeon?

We pay little attention to prognosis, and yet prognosis is what decides everything, even the assignment of the case; for prognosis means, does it not, the course a disease will follow under medical, under surgical, and under no treatment. The prognosis of pneumonia, for example, depends upon its own attributes, influenced a little by medical attention and a good deal by the patient's powers of resistance, and none at all conceivably, by mechanical (surgical) treatment.

Peritonitis—always till recently purely, medical—got, through its own lethal tendencies, the most evil of prognosis, influenced but little if at all by medicine. As soon as its mechanical nature began to be recognized, and as soon as the effect of mechanical treatment upon these causes was apparent, it became clear that prognosis was directly dependent upon "time and judgment;" upon diagnosis and immediate intervention. The prognosis of peritonitis in the perforation of gastric ulcer under medical treatment, was as bad as it could be; under late surgery, it was bad; under early, good; under the earliest possible, brilliant. Hence prognosis has given to surgery the emergencies of gastric ulcer. So it is in appendicitis, extra-uterine pregnancy, tumor torsions, and many other emergencies.

In some, on the other hand, prognosis, as determined by experience, has not so definitely placed the borderline between medicine and surgery. Take the acute conditions of the pancreas described by Fitz (Acute Pancreatitis: *Boston Medical and Surgical Journal,* Vol. CXX., No. 8). I have never seen a recovery after operation for acute hemorrhagic pancreatitis, and I am inclined to think that few surgeons have. I have seen what I regarded as the scars of healed fat necrosis, scattered throughout the peritoneum, and I once opened with success an abscess which possibly was caused by an acute pancreatic infection.

Prognosis in this very serious condition leads me to hesitate before operating, in the hope, though not perhaps the conviction as yet, that if there is any chance, it comes through the powers of Nature, aided by the physician's art. But unfortunately for accuracy of assignment, the emergencies of surgery are so varied within the abdomen that he is a skilful diagnostician who can say that *this* is pancreatitis, *that* appendicitis; *this* gastric perforation, and *that* an internal strangulation.

Hence accurate diagnosis promotes accurate prognosis; and, in the mere recognition of an emergency of some kind, the hopeless prognosis of acute pancreatitis is buried up by the hopeful one of acute emergencies in general. The surgeon is unwilling, upon so difficult a deduction as acute pencreatitis, to run the risk of withholding the aid which all confusing diagnosis so urgently demand, and, in all of which prognosis under surgical art, promptly applied, is so favorable.

But most diagnoses are sufficiently accurate, we should say, to enable us to decide what is medical and what is surgical. And yet are they?

An illustrative case at once suggests itself—a case in which my diagnosis was *acute haemorrhagic pancreatitis,* and Fitz's *acute intestinal obstruction.* I operated upon the patient (Vol. LXVII., p. 161), a man of fifty-six, with little hope, and that little based upon the possibility—nay, probability—of my being wrong. Fitz was very positive of his diagnosis, and I could not shake it in the least. I cut down upon a peritoneal cavity that was full of blood, and hastened to congratulate myself on the accuracy of my deduction, forgetful of that pride "which goeth before destruction." The blood came from passive congestion of six feet of small intestine, strangulated in a hole in the ementum. Fitz's diagnosis was as brilliant a piece of deductive reasoning as I ever saw.

The real borderland case is not, however, so much the one in which the operation is hopeless as the one in which surgery offers no better chance than medicine—if, indeed, it offers as good.

The one great example of this kind of a case is the neurasthenic with questionable lesion, especially of the uterus, ovary, appendix, or kidney. I should place the patient with a movable kidney in the category of the borderland. And yet, from another point of view, the movable kidney is a mechanical defect relievable only by mechanical art. The borderline here is in the case itself. Some movable kidneys are distinctly surgical, and even if the patient is a neurasthenic, that neurasthenia is one of the results of the imperfection. The same thing may be said of the chronic appendicitis, the painful ovary, and the misplaced uterus. And it takes a very little experience in surgery, medicine, and neurology to tell the case which demands surgery or medicine or neurological treatment.

I am convinced that by far too many neurasthenics are operated upon, for a recovery under surgery is the exception rather than the rule. Indeed, the patients are more often made worse than better.

The evil effects of surgery on the nervous and imaginative patient, whether neurasthenic or not, are so frequently seen that every surgeon knows the importance of a careful selection in such cases. There is a difference between an apprehensive imagination and neurasthenia. A man

may be apprehensive of disease—most people are—he may be imaginative even, but no person with a normal nervous system is a neurasthenic. Surgery, by removing the cause of fear, or even of imaginary or trivial discomfort, often returns in relief and comforts a hundredfold the risks and discomforts of operation. Operation upon the neurasthenic returns nothing to the patient. Her last state is worse than her first, and is often pitiable. And the worst of it is that surgery and the surgeon are blamed when a really good effort has been made. I see many patients, especially women, who are nervous wrecks, and who, with their friends, attribute all the ills to the surgeon, who has perhaps removed the ovaries or an appendix. This is a burden which neither the surgeon nor surgery should bear.

The neurasthenic, nevertheless, occasionally has acquired her neurasthenia by reason of some surgical lesion, the removal of which will in time permit a perfect recovery. I have seen not a few such cases. The deduction from these observations is that extreme care must be taken in the assignment of the cases, this one to the surgeon and that to the physician. The best rule is to forbid surgery until every medical and palliative measure has proved useless.

In the suspected disease of the imaginative and apprehensive, especial care is essential lest some really grave lesion be overlooked.

I do not think, however, that the surgeon or the physician is likely to err in careless diagnosis, for these are just the cases hardest to treat —those in which the most careful histories and the most painstaking examinations fail to find any physical explanation for symptoms. Operation becomes then, as it should, a last resort rather than a first, and its failure is not censurable; nor is it censured, I think, when undertaken in this the proper spirit.

There is a class of diseases which deserves special consideration under my theme; cancer on the borderline of the inoperable.

Whether the disease is medical or surgical, operable or inoperable, from the point of view of the patient, it is one of hope or of despair, of comfort or of discomfort, of prolongation of days, even if these days are, like those beyond three-score and ten, made up of strength, labor and sorrow.

This is a subject pregnant with the teaching of experience. From the point of view of the patient come the most important and effective considerations, and the surgeon must be guided in the assignment of the case somewhat by the patient's own wishes. The patient may wish to take desperate chances, or she may not. What is our duty in the matter? For example, what shall we say in helping her to decide whether to submit to an hysterectomy or not, when there is cancer of the cervix of questionable extent? Is there any variability in the line between the

operative and the palliative treatment of cancer, or is it a hard and fast line, never to be overstepped? In the solution of this question, momentous in itself, many things come up to help or to embarrass us. The first is the personal equation of the operator, the second is his experience upon which, however, his personal equation somewhat depends.

When my friend of the conservative tendency denies to the sufferer from cancer of the rectum all operative measures designed for radical cure, and deliberately restricts the patient from the beginning to pallaition, I cannot but recall the patients with rectal cancer, few though they may be, who have survived now these many years. When I see the frequency of recurrence after radical removal of cancer of the tongue, I fell almost convinced that in that disease there is no use in surgical art. I forget the patients, also few in number it is true, who have had many years of enjoyable existence.

My own personal equation in cancer of the rectum and of the tongue —my personal feeling—is that I would myself not submit to operation; and yet reason and experience tell me that by means of surgery present sufferings are diminished, and with a fighting chance of permanent cure; that in palliation present suffering is not diminished whereas future suffering is increased; that, on the whole, even with the danger or rather the blessed chance of immediate operative euthanasia, radical operation is best, and with a definite chance of permanent cure.

This, I believe, is the real reason why we feel as we do toward the surgical treatment of cancer—we do not see the cases until too late. I believe that cancer, recognized as early as we recognize it on the lip, where it is so conspicuous that it cannot be overlooked, will, in all parts of the body, yield permanently to wide excision; but if it is left until its presence in inaccessible regions can be detected by the touch, or in accessible ones until it interferes with function, or causes excessive pain, I am convinced that its cure, by any method, is the exception.

Hence the depressing effect of large experience upon the surgeon's hopefulness, when he cannot but be impressed by the inadequacy of his operation and the certainty of recurrence.

Prognosis is here again the thing that guides, and unfortunately it is determined far too often by the prevalence of the advanced and hopeless cases.

The borderline between medicine and surgery in the cases in question would be far advanced into the territory of the medicine were it not for the delay in diagnosis and the corresponding gravity of prognosis.

I dislike to say it, but it must be said and repeated until deaf ears listen: The hopelessness of cancer comes largely from errors in recognition on the part of the physician. I write these words filled with a just

indignation because a young woman has been "treated locally" for a year, while cancer of the cervix uteri has been going from operability to inoperability. The hopelessness of cancer comes largely, also, from faith in any remedies except wide-margin excision—from faith in X-ray treatment, in toxines, in trypsin and amylopsin, and in a host of remedies which, for one reason or another, have had their occasional apparent cures. What said Dr. Holmes? "What is the meaning of these perpetual changes and conflicts of medical opinion and practice, from an early antiquity to our own time? Simply this—all methods of treatment end in disappointment of those extravagant expectations which men are wont to entertain of medical art." One single case of proved breast cancer, or uterine cancer, cured by any treatment other than broad and deep excision is to me beyond belief. I feel justified in the strength of this statement in a list of recorded cases since 1890, of which the breast tumors alone make 1,300. The cure of deep-seated cancer by any method except excision is, I repeat, beyond credibility. There is, in alleged cures, always a possibility of error. There is no borderland between medicine and surgery in cancer, except in the case for any reason inoperable.

What greater tragedy can we find than that of a woman who has consulted me since the above words were written. And how can any man view with an untroubled conscience such a result of palliative treatment?

A woman of forty-five, a dressmaker, supporting herself and others, but now unable to work, was put under X-ray treatment for tumor of the breast some three years ago (Vol. 82, p. 161). There had been no cancer in the family. Three and a half years ago the patient noticed a small lump in the right breast, after having been struck in that breast by a woman's elbow. Her physician advised her to go to an eminent specialist in X-ray treatment of cancer. This physician discovered a similar tumor in the left breast. The tumors were treated three times a week for one year; then twice a week, and then once. In the meantime the right breast got "twisted in and drawn down to one side and very painful." At the end of the third year, the patient says, the physician congratulated her upon being so well, and told her that she was a very fortunate woman. She was still told to come once a week. Five weeks ago she was advised by him to have an operation and then more X-ray treatment.

There is now an infiltrating tumor of the right breast, which I think has involved the *pectoralis major* muscle and the thoracic wall. The nipple is drawn in and to the lower internal quadrant, where there is a deep sulcus. The axilla has a chain of glands enlarged to the size of an egg, and extending to, and I think above, the first rib. The patient is somewhat cachectic.

The left breast has a small, movable benign tumor without involvement of the axilla. The case is practically inoperable, but it is one in which an attempt should be made. I class this case among those in which the disease is almost sure to recur. I have several times removed the bulk of such tumors for X-ray treatment, but I have never seen a cure. The diagnosis here is scirrhous cancer, of which there is not the slightest doubt. In the beginning, the case must have been, by operation, highly favorable for permanent cure. There is now practically no chance. The patient is nervous and frightened.

Is there in the minds of those who apply new methods of treatment an inability to see and realize facts?

The deadly course of this tumor must have been easily perceptible from the beginning. So many times I have seen patients dying by inches under all sorts of diseases and all sorts of treatment, and yet being told—they and their friends—that they were "improving," that reports of favorable progress in hitherto incurable diseases, under new methods of treatment, excite almost derision; the word *improving* in cancer treated by X-ray, toxines, ferments, extracts, has to me a most sinister significance.

And I would not relegate all these cases to the surgical side of the borderline either; there are plenty of cases of cancer so situated that excision is impracticable, and yet cases so limited that these methods have less extensive disease to combat than in operable and defined tumors, as of the breast. A constricting nodule in the œsophagus, an infiltrating cancer of the cervix uteri, the pylorus, the orbit, or the base of the tongue—all such cases of inoperability may well be selected for the trial of the so-called "improved" methods of treatment. Similarly, superficial epitheliomata which cannot be removed without great deformity of the face or destruction of an eye, may well be subjected to the destructiveness of the X-ray.

But there are regions in which malignant disease is, from its situation and environment inoperable. The surgeon's art can only palliate. This line separates medicine and surgery as regards radical operation, but not as regards palliation.

Take cancer of the œsophagus, with starvation; cancer of the intestine, with complete obstruction; what does the patient's good indicate in such hopeless conditions? Shall we relegate all such to the physician, that he by his art may diminish suffering and allow a peaceful ending? Shall we deprive the patient of two or three years of comparatively comfortable existence in order that he may pass, with dulled brain into oblivion?

In matters of this kind it seems to me there should be no dispute. It is our duty to prolong existence in every way we can, even if that

existence is painful. The real decision rests with the patient. We may advise him to submit to operation or not, explaining truthfully the issue. He is himself, with the aid of his family and friends, to decide. Finally, from the patient's point of view, there is always the possibility of error. In my observation, cases of erroneous diagnosis multiply, and therefore cases of erroneous prognosis—cases in which failure to operate means death from a perfectly remediable cause, such, for example, as foreign body diagnosticated as cancer, actinomycosis, tuberculosis, inflammation, and many other conditions.

Hence the necessity of always taking into account the factor of error, before we abandon to hopeless palliation an operable case.

From the point of view of the physician and surgeon, the inoperable case must be considered chiefly in its ethical aspects. It is fair, too, to consider the effect upon the physician and the surgeon in our manner of dealing with the inoperable.

The illustrative cases which come to my mind most vividly are those of recent observation. I sometimes think that the time to write one's views upon any particular theme is when that theme is fresh in one's mind. If, as Thoreau says, the forcible writer is the one who has been there in person, the vivid writer should be the one who writes under the inspiration of the present. The horrors of the Commune, for example, are most vividly portrayed when the writer is under their immediate impression—more forcibly, too, and, best of all, more truthfully. I have read a vivid account of the siege of Vicksburg, written by a refined, intelligent woman, who had the misfortune there to suffer the privations of the prolonged siege. He who can write forcibly upon experiences of which he has read, can write much more forcibly upon those he has had; and he who describes vividly the feelings of the past can describe much more vividly those of the present. And even the torpid writer must wake up in depicting the things of present interest. Thoreau's own delightful journal was written notebook in hand, as he contemplated nature.

In using the following cases to illustrate my views, I write while deeply under their depressing influence. And yet that surely is not so fair a conception as the one which is based upon a general review of the whole subject, considered from the standpoint, as it were, of the historian; for a calm and judicial verdict cannot be rendered under the excitements, prejudices and passions of the moment. Be that as it may, the accidental presence at my office hour, of two patients upon whom I had operated for cancer of the tongue gives a vividness to my impressions of the surgical treatment of this disease; and my tendency is perhaps to express myself too forcibly upon this part of my subject. But it gives

me a chance to take account of stock, as it were, of two cases on the borderland of the inoperable.

The first I operated upon for cancer (Vol. 39, p. 132) of the tongue seven years ago. After the first operation the patient was well for several years. He passed the absurd three-year limit in perfect health. A local recurrence appearing two years ago required an operation which took in part of the tonsil and soft palate. Since then there has been no local recurrence, but a recurrence in the neck, which was thoroughly dissected in the beginning. The third operation was very extensive. It was performed in November, 1908. There is now an involvement of the parotid, and, in my judgment, the case is inoperable.

When this patient first came to me the disease was not extensive; the case was a very favorable one, and I treated it by an extensive dissection, as all malignant disease should in the very beginning be treated.

The second patient (Vol. 81, p. 87) had been treated for gumma, like so many cases of cancer of the tongue, until the case was, at my first examination, apparently inoperable. The man was young, vigorous, and determined to take the last and smallest chance. I removed the whole tongue through the neck, and made an extensive dissection in the neck itself. The operation was performed on January 5th, 1909, and there is already a hopeless recurrence.

A third patient, an old man, operated upon within three months, died a week or two after extirpation of the whole tongue.

Here, then, are three recent experiences with a most sinister lesion. In all the cases the most radical operations were performed. The question is whether there is a borderline between operation and palliation, across which the surgeon is inclined to trespass to the injury of the patient, his art, and his own reputation.

Are the teachings of pathology, of surgery in general, and of one's own experience in particular, inadequate to protect the patient from useless multilation, the art of surgery from predictable failure, and the surgeon's own reputation from meddlesome interference with hopelessness.

In the answer to this question,—and my answer applies to cancer in other places, particularly where wide-margin dissections are impossible,—one cannot but be influenced by his personal equation, and especially by his natural hopefulness and his ability to forget, painful experiences.

And here let me digress a moment, led by the association of ideas to consider the value of experience and President Eliot's recent utterance at St. Paul upon the subject. But the great Designer showed, in the sequence of intellectual inheritances, the wonderful wisdom of creation, for who could doubt what would be the effect upon the progress of

medicine and surgery if our successors could begin their work influenced exactly as we are by our experience, where we lay that work down? *Experientia omnia docet;* it teaches the individual up to a certain point, and it makes him, to a greater or less degree, wise; but it makes him timid, cautious, and disinclined to disobey the traditions of the past. The beginner who has to learn in the dear school of experience strikes out for himself. He discards the warnings of his elders; he does harm in grasping for good in so doing, but he seeks and secures good that is new; he leaves beaten paths and makes new ones. Hit or miss, he brings to bear the originality that is in him, untrammelled by the teachings of a passing generation, with an aggressiveness that overthrows all traditions, musty and valuable as they may be. I have followed in imagination the course of the physician through coming ages, could he retain his bodily and mental vigor, and live to be as old as Methuselah, and I am always brought to the conception of a powerful intellect brought to a standstill by the accumulated experience of centuries; to a body which, as it were, has ceased to move in any new direction, retarded and silenced by its own ideas and environment; not unlike the moon, which, through the friction of its ancient tides, has ceased to rotate on its axis faster than it revolves about the earth, which itself will, for similar reasons, losing a second each hundred years, one day rotate upon its axis but once a year!

And therefore in tracing the borderline between the operable and the inoperable, I am guided by my own observations; but these observations do not prevent; they rather help; they are intended to help younger men in blazing a new trail, a fresher and more reliable and more productive area of professional attack.

It is beyond the scope of my paper to consider in detail all the cases in which the surgeons have overstepped their line, and the physicians theirs; but in gastric diseases, it seems to me, the wise example of the leaders in surgery has been outstripped by far too many of their followers. I have often thought when some new procedure has been introduced—and I recall the ephemeral existence of many—that its worst enemies have been its friends, as in the treatment of prostatitis by castration or vasectomy, or the treatment of all female pelvic ills by oophorectomy. After many years, the true value of new methods, whether medical or surgical, becomes evident, after a full and patient presentation of the evidence before a jury made up of the whole profession. It seems but natural that enthusiasts should go to extremes, and perhaps it is as well that extreme views as to indications for operation and as to methods of operation should prevail, for it is only after a wide diversity of opinions and experience that a safe *mean* is deduced from unsafe *extremes*.

In gastric surgery, I am convinced, there lies a wonderful amount of good, but, through ill-considered indications in special cases, a vast amount of harm. The trouble is in the field of gastric surgery, as well as in other fields, that what is good for one disease is useless for another. The line is overstepped wantonly and unjustifiably, and failure cannot but result. I am seeing every day the evil results of operations based upon faulty indications—the failure of surgical methods of treatment when medical were fully competent, and were by no means exhausted. We surgeons must remember, when we are inclined to hasten into the field of stomach diseases, how really infrequent, as Richard Cabot has recently shown, are real organic lesions, as compared with functional ones. When positively indicated by organic changes, I know of no more brilliant surgery than that upon the stomach, led by the Mayos, Moynihan and others.

The borderland of medicine and surgery has been explored so many times that little is to be learned of it; but we must not forget that serious and remediable organic disease may exist without our being sure enough of the diagnosis to run the risk of losing precious time. This uncertainty of diagnosis, with the great safety of surgical technique, indeed does seem to justify in cases of doubt an exploration of the borderland.

But the tendency has been, I think, to multiply explorations beyond all reason; first, because they are so safe; and secondly, because diagnoses are always uncertain. I have nothing to say against explorations in any cases that belong to debatable groups, provided the prognosis of the suspected and thoroughly-studied lesion is grave under delay. When the patient by delay must lose her main or only chance, if the suspected disease is really present, it takes a greater responsibility than we should be called upon to bear to refuse an exploration. But the indications for exploration—safe though exploration may be—demand the most painstaking effort at diagnosis; and it seems to me that the tendency has been toward inadequate and loose methods of diagnosis, and the resulting exploration, rather than toward careful and precise methods, with a resulting positiveness that makes exploration unnecessary.

In debatable cases I admit that failure to convince myself that a disease remediable by surgery is not present should lead to operation; but I do not admit that diagnosis is so impossible of cultivation and so radically inaccurate that we cannot in the vast majority of cases save our patients from unnecessary operation.

Take many cases of cancer of the liver, of the stomach, of the abdominal viscera generally—explorations in most cases are absolutely unnecessary, unjustified even by human fallibility. The trouble is that, with the possibility of demonstration, we do not take all the pains that we might.

The exploratory operation is for cases in which error is quite possible, and the disease, without surgery, hopeless, but with surgery, hopeful.

In giving an impartial verdict on the results of treatment, we must never forget the influence of *bias*. In medicine we can learn much from the processes of law, which, however complicated, were originally designed for the detection and demonstration of the truth, the whole truth, and nothing but the truth. The original design has been bettered by long years of practical experience. Evidence upon which truth is based is carefully guarded lest error creep in. All parties to a cause are selected for impartiality. Bias, partisanship, advocacy are confined to the attorneys. What can we do in a cause like that of the X-ray treatment of cancer, or any radically new treatment of well-known diseases? The physician or surgeon states his case, presents his evidence, makes his argument. At the same time he is judge and jury. Many and many a case—in fact, most cases—are presented to our profession without a single effort at control. The poor reader takes the *ex parte* evidence as truth and finds so quickly and universally that he himself cannot get such results that he is only too inclined to throw out all statistics. In this he goes, of course, too far the other way.

There is, in too many instances, a tendency to see results of treatment that do not in reality exist, as in the case of the poor woman with cancer of the breast, which has been sprouting under the X-ray. In the time when testicles were being excised for enlarged prostate, I saw two castrations, in both of which the patients, immediately upon severance of spermatic cords, emptied their bladders most vigorously all over the surgeon and the operating-table. Wonderful effect of castration upon prostatic retention!

It is not always practicable, but it is extremely desirable, that there be an impartial and accurate control over the results of medical and surgical treatment.

The borderline between medicine and surgery will never remain a fixed one; nor will that line of invasion held by the skirmishers of aggressive surgery always be advancing into the territory of medicine. I am fully persuaded, for example, that the surgery of malignant disease will become in the near future a thing of the past. A single case of undoubted sarcoma, cured beyond question by Coley with his toxines, demonstrated to me the possibility of non-operative cure, and his subsequent successes have engendered a strong hope.

Though I have not seen as yet a single real cure of real cancer (beyond that of the X-ray in superficial epitheliomata—itself a destruction and therefore a surgical process—I believe that the time is not far distant when we shall see real downright deeply-seated cancer cured by

some non-operative method; and when I see one single success of this kind, I shall be as fully convinced of ultimate success as I was of the eventual success of aviation when I read of the first flight of an aeroplane. But the first element in estimating progress is, as I say, a fair and accurate control. We have had too many claims of success, which time has shown to be unfounded.

In the treatment of cancer the borderland fight is hottest. The battle is between friendly and generous foes. Indeed those of us who are carrying the fight against cancer into the heart of the enemy's defences are only too eager to lose the victory; and we long with a great longing for the time, soon to come, when in the fight against malignant diseases we may turn our swords into plowshares and our spears into pruning-hooks—our scalpels into hypodermic syringes and our scissors into medicine droppers!

"LAW AND MEDICINE."*

By the Honourble Mr. JUSTICE WILLIAM RENWICK RIDDELL,
King's Bench Division, H.C.J., Ontario.

I AM delighted to meet the members of the Aesculapian Society.

I am reminded of the story of your eponymous hero, Aesculapius, the father of all physicians. It is said that he was the son of Coronis by Apollo. While he was still *in utero,* or, as we say in law, *en ventre sa mere,* his mother was slain by her jealous lover; and, when her body was to be burned, Hermes saved the child from the flames, successfully performing the Ceasarian operation. Thus early in the history of the science is proved the efficacy of the knife.

"Which things are an allegory." Coronis means nothing else than that which is curved or crooked. Is the plain meaning not that Apollo, who had to do with man's disease and health, called in the assistance of what was crooked (a clear allusion to bread pills and the like) and so brought forth something new, the medical profession? Of course the story of the child escaping the fire through the assistance of the god of trickery is significant of how the medical profession *does* get out of a hot place with the help of——. But I do not further pursue the subject.

Or am I quite wrong? And does the story not mean that the bright God who has the power to ward off plagues and epidemics and to relieve mortals from disease, evolved from the crooked Shamanism and quackery of the existing pretended healing art a new and better science—

* An address delivered before the Aesculapian Society of Toronto, January 14th, 1910.

thereafter destroyed the old; and the new science became a living and active force through the study of nature? For Hermes was the god of nature as well as the god of thieves.

The story that he was brought up by Cheiron the Centaur may indicate the dependence of the G.P., upon his stable-man; or it may show symbolically that he must work like a horse, though with the brain and intelligence of a man.

Whatever be the true interpretation of the myth, it seems to me—notwithstanding the doubts sometimes expressed—as clear as anything can well be in the absence of contemporary record, that the ultimate source of the medical profession is to be looked for in that body of men found in all peoples of a certain grade of civilization, in which the priest and physician are one and the same person—"Medicine man," "Shaman" or whatever the name he may bear. The origin is of course lost in antiquity.

In the profession of the law, on the other hand, we can trace with reasonable certainty, beginning and advance. As law first was in no way different from the customs of the tribe, supposed to be thoroughly known to all, there was no need of the advocate; and it was not till comparatively late in history that advocacy appears as a profession. Take Athens for example—the Court consisted of a defined portion of the freemen of the State. All the people took part at some time as jurors, and the litigant addressed the people assembled. In time, it became the practice of the litigants to procure speeches to be written for them by skilled dialecticians but the counsel was not, at first at least, called in.

In Rome, indeed rather early, the advocate did make his appearance—the effect of his eloquence and skill everyone knows. In England it was well within historic times and during the Plantagenet period that we first hear of barrister or solicitor.

And in the subject matter of the sciences, there has been a like difference.

Real medical science may be said to have begun with rational empiricism and experiment. The story may not be accurate that the first system of medicine was based upon a comparison of the remedies which patients had found beneficial, the treatment and the result being recorded in the Temple of Aesculapius. But whether that be so or not, there can be little doubt that it was by some process of observation and comparison of the results of remedies that system, however defective, was introduced into medicine. This must needs be a science of observation and experiment—and most of the absurdities of mediæval (you will observe how careful I am to particularize "mediæval") physicians arise from the fact that they tried to make everything fit into a preconceived theory—itself the result of unfounded and immature generalization.

Modern medicine has generalized; but that process has been held in check, and theory made to give way to fact, not fact to theory.

In law empiricism is out of the question. The customs of the clan, tribe or nation are established facts—the early Kings and Judges indeed received illumination from the gods, but the "themistes" so received were delivered by them to the people, and these again were established facts. And where the customs of the people were not supposed to be known to all, but were treasured up by a college of priests or the like, the customs were none the less known facts. The law then was a matter of authority not of experiment—that litigant had success, who managed to keep closest to what authorities laid down for his guidance, while that paient was not always the most fortunate who was treated most *secundum artem*. (Of course again I am speaking of very remote times and with no reference to the present).

It is most interesting to compare the views of medical men now with those of their remote professional ancestors. At first, and for ages, all disease was supposed to be caused by an angry god either by immediate stroke or through the agency of a daemon or sprite—disease was the act of a being indefinitely great as compared with man. Now, at this long last, it is the indefinitely minute, the bacillus, the coccus, the spirillum. Formerly the god had to be propitiated by sacrifice; now the potent mischief-maker must feed itself to death, or be met by some entity still more potent.

It is not exactly so in law; but not wholly dissimilar. In olden days it was all custom; and the customs were believed not to be of human but of divine origin. The founding god or the eponymous hero of the clan had laid down the rules his descendants were to observe—violation of any of these rules was sin and crime (there was for ages no distinction between sin and crime), every member of the community had a right to the observance of these rules by others as well as the duty to observe them himself. And it was the god or the deified ancestor who inspired the King or Judge, in deciding what was the right, that is, what was in accord with the original plan. All law was divine, and from a divine law giver; and man could not make or change. "Great Pan is dead," the gods have passed away, the heroes have lost their traditional power; it is recognized that man may—and must make rules for himself—vox populi is now indeed what vox dei was supposed to be, and for all practical purposes vox populi *est* vox dei. Nor God nor King has "the right divine to govern wrong"; that is reserved for elected parliaments and legislatures.

Far be it from me to compare the sovereign people or their representatives to the bacillus, the spirillum—but from a god to a voter is

in the same direction—though the distance may perhaps not be quite so great—as from a god to typhoid germ.

And both professions have profited. In medicine the supernatural is almost if not quite effete. No longer is that grim passage of Scripture quoted "And Asa in the thirty and ninth year of his reign was diseased in his feet until his disease was exceeding great. Yet in his disease he sought not the Lord but to the physicians. And Asa slept with his fathers." (I pause here to say that it may have been his name, which means Physician that made Asa prefer the doctors; and I further remark that it seems to have taken two years for them to kill Asa even with this disease of the "feet".) Nor would now much if any attention be paid to such an argument as was with fiery ardour launched against Simpson's proposition to use chloroform in midwifery. The Scottish Clergy inveighed against the practice as sinful, as being, they said, an attempt to interfere with the primal curse laid upon the woman: "In sorrow thou shalt bring forth children." Simpson, indeed, replied with some effect that the first surgical operation on record was anæsthetic; for when the excision of one of the costæ was to be made from our first ancestor, the Operator "caused a deep sleep to fall upon Adam, and Adam slept." No plague or epidemic comes now from the superior but from the lower and controllable—and nothing is sacred to the hygienic physician.

And in like manner, all reverence is lost for old ideas in law—we know now where our law comes from; if we do not like it, we change it; the new is ruthless with the old. It is a distinct gain that we have learned that nothing is valuable because it is old, or true because our fathers said it. The Homeric heroes boasted themselves as being greater than their fathers—we should be ashamed if we were not greater than ours. We have had all the opportunities they had, and more; all the examples they possessed and theirs in addition.

But while our law is thus in a state of flux, it must not be forgotten that immensely the greater portion of it is in principle the same as it has been for centuries. While in medicine, in not one case out of twenty can a physician gain any practical advantage by consulting an authority twenty years old, in law there is not one case in twenty in which authorities much more than twenty years old will or may not be—if not conslusive, at least of advantage. A physician who has been in practice twenty years will have twenty times as much to unlearn as his brother of the same age in the legal profession—the former generally must:—

> "Be not the first by whom the new is tried
> Nor yet the last to lay the old aside;"

but with the latter "*novum et cd hanc diem non auditum*" is anathema as it was to Cicero, one of the greatest of his tribe; and his rule must be, "What is new is seldom true: What is true is seldom new. *Immer etwas Neues, selten etwas Gutes.*

With their varying functions and in their different spheres, the two professions of law and medicine have the same object in view—the good of the people—incidentally, of course, the good of the practitioners themselves. Lawyers, I know, are often charged—as though that were, if not a crime, at least a sin—with practising for money; physicians with insisting upon as great remuneration as possible for their services. We have good authority for the doctrine, "The labourer is worthy of his hire." And while I do not deny that both doctor and lawyer work for and expect to receive money, I have not found as yet any branch of trade, any business or profession which is different in that regard. The farmer does not carry on his farm just because he will thereby increase the wealth of his country; the mechanic is not wholly altruistic, the merchant will shut up shop if he cannot get paid, the valuable services of the press are not uncommonly billed at twenty cents per line, and when the child of a clergyman was asked if his father was going to accept a call to another church at a larger salary, he said, "Well, Pa is still praying for guidance, but Ma is busy packing." "The Chieftain to the Highlands bound" who cried,

"Boatman do not tarry
I will give you a silver pound
To row me o'er the ferry."

was told indeed by "that Highland wight,"

"I'll go my chief, I'm ready,
It is not for your silver bright,
But for your winsome lady."

But poet (being a Scotsman and consequently truthful), does not venture to say that that Highland wight did not have in his sporran that same silver pound before the boat left the dock. If he did omit this trifling formality, he was different from his countryman spoken of the other day in *Punch,* who said to the passengers upon his ferry-boat when the storm became dangerous, "There's nae saying what may happen; sae I'll just tak' yer fares."

This *I* can say: I was at the bar for over twenty-three years and have been on the Bench three more; and I have never known or heard of a case in which anyone, however poor, with any fair semblance of a righteous claim, who could not have his case put before the courts by a member of the bar with all energy and skill; in most cases without

any reasonable hope of remuneration—and if any person sick or maimed should suffer because a doctor could not be found who would attend him gratis, the whole country would be filled with the outcry.

Both professions are given certain privileges for the common good, and both make it, or should make it, clear that these privileges are exercised for the good of the community. Just so soon as either fails thus to pay for its privileges, the people have the right—and should exercise it—of taking these privileges away. But that day, I venture to think, is far distant; and will, indeed, never come if the practitioners of the two professions continue to act as they have done in the past and are still acting.

The two professions have generally lived in harmony, though each has its jest with the other—the lawyer jibes the doctor that his failures are six feet below ground, the doctor retorts, "and yours are six feet above." The doctor "jollies" the lawyer about charging $100 a day at a trial and pumping up tears before a jury—the lawyer replies, "a trial is a major operation and mighty few doctors will take as little as $100 for an excision of the appendix if they can get more. A trial is a struggle against a mortal antatgonist for rights claimed on behalf of the client. Treatment of a disease is a struggle for the life of a patient against the antagonist whose name is Death—and a physician who would not pump up tears or anything else if he thought that he would thus win his fight would not be worth much; and the arguments of a counsel could not be more fallacious than the *placebo* treatment with coloured water and bread pills." Indeed the thought that both are often engaged in a struggle for another, is one which should bind the professions together. I am not sure which has the easier task.

The doctor is in a fight with that dread antagonist who must conquer some day—that antagonist sits at the other side of the chess-board and watches every move; he is in no haste but while he plays fair he never makes a mistake himself and he relentlessly exacts the full penalty for every mistake of his opponent—and unfortunately that opponent does not know all the rules of the game. The lawyer has an antagonist fallible as himself and who does not always pursue his advantage; but all the rules of the game are known. Which contest do you prefer?

Do you prefer an antagonist, invisible, without haste, rigidly fair, absolutely infallible, who knows (what you do not) all the results of every act, or him who is visible, mayhap hurried, seeking advantage but making mistakes like yourself and with the same knowledge as you?

Whether it is from their lives being lives of conflict or for some other reason, the two professions have always fraternized with each other more than with the sister profession of theology. I say *the* sister profession—for many years, and, indeed, until within our own day, there

were only the three professions in civil life. Now sisters, then unborn, are crowding round the family table, and claiming as of right a seat at the family board on an equality with the three older sisters. Dentistry, Civil Engineering, Mining and Electrical Engineering and the like have ceased to be trades and become professions—like the debutante who adds to the train of her gown, while she shortens it above and "comes out," these have laid aside the child, and claim to be full grown. And there ore others coming.

I can see no reason why that fellow feeling between your profession and mine should not continue; and, on one side at least, increase.

You all know the old story of the Scotswoman who said to her friend, "it's nae wonner we lickit the French at Waterloo—oor men prayed." The friend asked, "but dinna ye think the French prayed too? Her ready reply was "Nae doot—but wha could unnerstan' them, jabberin' bodies?" I do not vouch for the theology—but there can be "nae doot" that the ability of one to understand another makes for sympathy and harmony.

In the past the terminology of the physician was not difficult—at least anyone with a little knowledge of Greek and Latin could easily follow it—the language of the law was indeed derived in large part from the Latin but with the most extraordinary perversions from the original and classical meaning. The other day at a meeting of the bar of one of the United States, I told them that I looked upon myself as a brother, their terminology was familiar and especially their Latin; and I added that "If I find myself in a body of men who pronounce Latin correctly and according to quantity, I may be amongst scholars, but I know that I am not amongst common-law lawyers."

There were in the old law many terms which were used in what anyone but a lawyer would call a non-natural and certainly a wholly technical sense. Let me tell you a story. A doctor and a lawyer were disputing about their respective professions; and the doctor particularly found fault with the language of the law. "For example," said he, "who can understand what you mean when you speak of "levying a fine?" "Oh," said the lawyer, "no doctor can be expected to understand that, for it is equivalent to 'suffering a common recovery." I do not wonder that that story has fallen flat; no one who has not studied the old law can even understand the language—at a dinner of lawyers the story is always a brilliant success.

Now all that mystery of the law is about gone—our laws are becoming simpler and so is our language—for the intricacy of the old rules is being substituted common sense. Except in real estate there is not much that a layman cannot follow and understand.

The very opposite is the case in medicine, the microscope has revolutionized not only the principles, but also the nomenclature. Not many years ago, Huxley could say that the student of medicine should put two full years at the beginning of his course on the study of anatomy and physiology alone—in anatomy to such an extent that he *knew* it, not simply that he could recollect if he had time, but so that if he waked up in the middle of the night and asked he could immediately answer (because he knew his anatomy like the multiplication table) any question on any bone, muscle, nerve, vessel or tissue, in the human body. Now I venture to think, no one would advise so much time to be taken up even in anatomy and physiology when so many things are to be learned—and if not known, at least known about. No one cares nowadays for the marking on the body of the Spanish Fly, and a teacher of materia medica does not venture into the minutiæ even of twenty years ago. The student has not the time—there are more important things to be learned. And the terminology is being developed and extended and changed in the same way—the new wine cannot be contained in the old bottles. No lawyer can know much about medicine of the present day—though there was nothing to prevent Dr. Rolph in his time being master of both sciences—there are *now* too many facts to be learned.

I have for some time been preaching the doctrine that a little knowledge, at least of the procedure in the courts should be taught as an integral part of medical education, at least to those who desire it. Some years ago I prepared and delivered a series of lectures on "The Doctor in the Courts"—The Doctor as Judge, as Plaintiff, as Defendant, and as Witness—to the medical students of the University. These were received with some approval; and it is perhaps rather a pity that some one has not continued the series. Such lectures should be given by one who is actively engaged in the law; it would be no more absurd for a lawyer who knew surgery only from the books to attempt to teach surgery than for a doctor who had only read about law to try to teach law.

Of course the objection is want of time, and that objection may be valid; but it does seem to me that considering the enormous importance to the practitioner in medicine of an elementary knowledge, at least, of the law by which he is specially governed, some place might be found for such a study, even if only optional with the student himself.

I cannot but think that the members of the two professions have much in common, much to learn from each other and should see much of each other. Perhaps some means may be found whereby their intercourse may be increased, it will do both good.

And now I must stop. I fear, as it is, I have talked too long. I conclude by wishing this society and the profession of which its members form a part all the prosperity future years can give. "By their works

ye shall know them." The only physician whose name we know in Gospel times was Luke "the beloved physician." I sincerely hope that all physicians will be called by their patients and the people "beloved" because they have deserved the apellation by their works.

ON THE ASTIGMATIC DIAL.*

By FRANK C. TREBILCOCK, M.D., Toronto, Ophthalmologist to the Toronto Western Hospital.

THE value of the astigmatic dial in the diagnosis of errors of refraction is a moot question; this we judge to be so from certain points in its everyday use, e.g., it is seen but rarely in the clinic rooms of our large hospitals; many front-rank oculists use it not at all; it gets little more than the merest mention in many of our text-books; in nearly all cases, the optician, whose methods are supposed to be less scientific than ours, uses it. Summarizing the above one might say, if the men of more science neglect it, and the men of less science take it up, surely the case for the dial is lost so far as we are concerned. However, it must be admitted that results are the real tests of usefulness of any method, and it cannot be gainsaid that our patients are often admirably satisfied with the findings of the subjective tests.

The history of the clock-face as a diagnostic aid goes back to the very genesis of our knowledge of astigmatism. Towards the end of the eighteenth century it was, that Thos. Young found that he could see some radii of the circle more plainly than others, and ever since then the clock-chart has been in more or less constant use as a test of sight.

Donders mentions as the first subjective symptom of astigmatism that "stripes running in different directions are seen with unequal distinctness, and when close together some appear to coalesce," suggesting the use of the fan in this anomaly, but not elaborating any method therefor.

The most detailed description of the proper form of chart which I have been able to find is by Landolt. After discussing the question at some length, he cites the opinion of Javal, Green, and Snellen, acquiesing himself, that the clock should be "a figure composed of black radiating lines on a white ground; these lines must be exactly alike, and it is best to have them equi-distant." The reason for this I cannot clearly see, and to it I shall return. The writer continues:—"The opinion of patients as to the greater or less distinctness of the different lines is generally too uncertain for us to trust to it absolutely; hence

* Read before the Toronto Academy of Medicine.

we have them look also at the test-cards which we place by the side of the card upon which are the radiating lines."

The clearest statement of the method of using the astigmatic dial which I have read is in Sir Henry Swanzy's new book, but to my mind much of its value is negatived by the omission of any mention of the preliminary wearing of strong convex lenses, i.e., the so called fogging system.

In any case the test being entirely subjective, its value is modified on the patient's part by his stupidity, his nervousness and excitability, and his desire to show to good advantage, especially to appear positive when really he is not; on the physician's part by a tendency to ask leading questions in order to save time, and possibly to become impatient over the irreconcilable answers received. It goes without saying that the test is not applicable to children.

Some have objected to the use of the chart on the ground that the patient's accommodation will vary as he gazes fixedly at different radii, and so results will not be trustworthy. Possibly this may be so with the full dial in occasional cases, but if the fogging system be carefully used and the chief diameters having been determined, each be corrected separately as if it were the only source of error, this (chance of error) will be reduced to a minimum.

I am convinced that if certain of these objections could be overcome, the dial would be a satisfactory aid to diagnosis and perhaps quite as reliable in its results as some of the elaborate methods in vogue to-day. If our semi-stupid patients could be met half-way by being given a simpler test-card, and asked fewer questions; if our nervous and excitable patients could have their high tension allayed by a less exacting test than to be asked which of a set of lines appears most clear when probably every letter and line upon the wall is in perpetual motion; and if our over-agreeable and anxious-to-please patients could be spared the dangers arising from the examiner's leading questions, then the clock-chart would deserve more notice.

During the days which have gone by since Donders' time, many modifications of the dial have been described. Some have suggested parallel lines in groups of three, all equal in width and arranged at intervals of 15 degrees around a central point; some use single lines only, broad; others single lines only, narrow; some prefer the full circle, others the upper segment only and speak of the astigmatic fan, Snellen's sunrise, etc.

O'Becker took the four chief meridians out of the circle and paralleled a number of each to form four square figures, making a new chart which is in no way better than the one he dissected. Pray and Hayman were the first to construct letters out of the diameters which O'Becker

set up in squares, but these seem to have no advantages over the other and are open to the same objection, that they will serve only when the astigmatism is one or other of the chief meridiens.

In none of these new forms did the makers touch the salient points which make the dial difficult to use satisfactorily. The nervous patients remained more or less irresponsible; the dull patients were never sure of anything; and the agreeable ones still gave to our questions the answers they thought we desired. Bludenell Carter came to the rescue in part, he put only three parallel lines upon an inner circle, and rotated it upon the clock face. This eliminated the chance for comparison, and allowed any meridien to be accurately picked out. The patient was now brought to the point, "Are these lines clear and sharp, or are they fuzzy?" And the hand was rotated until they were at their clearest; this seems to be the most satisfactory type of chart suggested. However, the patient was never unconcious of the physician's presence, and as the examiner turned the dial first this way and then that way, it was very difficult to be sure of the sharpness of lines at six meters, and especially if the doctor showed the least sign of hurry or impatience, the proper meridien was not found; also there was still the long list of questions.

I have not yet spoken of one of the great objections to the use of the sunrise viz., the necessity of correcting the ametropia with cylinders in the early stages of the examination. Possibly there are some who can take out a cylinder from an ordinary trial frame and put back another and another, getting the axis of each in the same meridien, e.g., 35 degrees, without any sign of impatience, but I have found the correction before the full dial with cylinders, a nuisance to me and, I fear, an annoyance to the patient.

The modification of the dial which I desire to show you is one I have used in a good number of cases most satisfactorily, and it overcomes, I believe, some of the objections cited against the use of the sunrise; if the vision be first fogged with bi-convex lenses for from ten to twenty minutes, I think its use will not often lead us astray.

The points in it's use which make me think these objections are overcome are as follows:—(1) The patient is not asked one question regarding the distinctness of any particular group of lines, but is left alone to rotate the dial until the rotating diameter be at its clearest; possibly he may be so fogged that the plus lens in the trial-frame may have to be in part neutralized. The physician may leave the room if the patient be excitable. In the majority of cases a great deal of interest will be taken in the test, and the meridien of least curvature be quickly and accurately found.

(2) All questions regarding the sharpness of the edges of the lines are rendered unnecessary by asking the patient to describe exactly what he sees. Here I have gone contrary to the dictum of Landolt concerning the width of lines and interspaces. The central line corresponds to the width of those used in building up Snellen's type D. 24. the first interspace and second line—D. 12; and the second interspace and third line—D. 6. Consequently the ametropia of the plane at right angles to the plane of the lines may be accurately corrected as it could be in a case of simple hypermetropia seated before the ordinary test-types. When full vision is attained in the first meridian, the hand is rotated through a right angle and the neutralization proceeded with until full vision is gotten there; the results are set down graphically as after a retinoscopy.

(3) All correction may be made with spheres. This makes the examination very rapid because there is no worry about axes and until we get very near the correction, the trial lens may be simply held in the fingers. This could be also done before Carter's chart and even before the full dial by using the stenopoeic slit in the trial-frame. However, many patients do not like the little slit, and should the glasses not be comfortable, as will occasionally happen after every method, he may say the aperture did not give him any chance, and so criticize unfavorably the method of examination. Also, there is always the danger of a sudden jerk of the head, a touch from the examiner's hand or elbow or the insertion of a new lens into the trial-frame altering the exact axis of the slit and so rendering useless the examination.

The London teaching dissuades us from the use of the ophthalmometer; a few days at Moorfields watching the varying results of skiascopy in the hands of the masters there, is sufficient to prove the value of the shadow test to be at least a variable quantity; and the ordinary method of using the subjective tests is notorious for its errors. I feel sure that with moderate exeercise of that ability to take infinite pains, which is the real secret of success in whatever method we use, this subjective test for astigmatism may be useful to all of us. I regret that especially among the younger men it has fallen into a state of conscious neglect, if not of positive ill-repute.

The only point upon which the dial spoken of above differs from the one proposed by Bludenell Carter, other than the way the lines upon the revolving hand are drawn, is that the patient revolves the hand himself. This is managed simply by having a grooved wheel fastened to the back of the dial, and in this groove runs a string, the ends of which are carried through a pair of double pulleys on the ceiling, and so to the patient's hands.

THE USE OF ADRENALIN CHLORIDE IN SPECIAL WORK ON THE EYE, EAR AND THROAT.*

By MURRAY McFARLANE, M.D., Toronto.

ADRENALIN—$C_{15}H_{15}NO_3$—is a chemical substance chrystallizing in various shapes, isolated in 1901 by Takamine and Aldrich from the suprarenal body of the ox, grayish white in color, slightly bitter, and leaving a numb sensation of the tongue. It is very soluble in hot, less so in cold water, turning pink on exposure to the air, this change not affecting its power in any way. It is put up by Parke, Davis and Co. in a 1/1000 solution of the chloride with the addition of .05 per cent. of chloretone as a preservative.

Shortly after a solution of 1/1000 adrenalin chloride is dropped into the conjunctival sac the membrane becomes white and the tissues at the inner canthus shrink; a few more instillations and the skin begins to whiten; sometimes the pallor extends to cheek, nose and eye-brow. Cocaine may be used with it, reinforcing its action and rendering it very valuable for operative work, as we all know.

Prior to the isolation of adrenalin, much work had been done by Brown Sequard, Oliver, Schäfer, Bates, Cohen, Floersheim, and others, who used solutions of the suprarenal gland. The great difficulty was owing to the rapid deterioration of the animal extract and the difficulty of preparation of the solutions, as the writer can testify.

Many suprarenal gland extracts are almost identical chemically with adrenalin, also physiologically and chemically. A few of the recent ones are hemisene, renaglandin, adnephrine, paranephrin and renostyptin names applied by the different firms of manufacturing chemists supplying them. In diseases of the eye, nose and throat, the solution can be used without fear, although one observer considered that a case of glaucoma was caused by the use of adrenalin. Sidney Stephenson, on the other hand, uses it in glaucoma. In the nose for cases where the submucous section is being done or where it is desirous of gaining access to the accessory sinuses, adrenalin chloride solution is of very great value by its power of rendering the parts bloodless and causing retraction of swollen tissues.

The notes following were from observations made some eight years ago when the writer was asked by Parke, Davis & Co., to report upon the new preparation of the suprarenal gland just isolated by their chemist, Takamine. Since then it has been used with unfailing satisfaction, care being taken not to use the solution in too great strength, pain being occasionally noted in the nose and face when 1/1000 was painted upon the turbinals; also in three cataract extractions it seemed to cause a pro-

* Read at the Toronto Academy of Medicine.

fuse hemorrhage from the iris when iridectomy was done, which may have been only coincidence.

In fifty cases of conjunctival injection from causes varying in nature from simple congestion due to eye-strain to the most severe types of conjunctivitis, a single drop of adrenalin chloride solution, 1/5000, in the conjunctival sac, almost immediately caused a blanching of the membrane, commencing in about ten seconds, and reaching a maximum in from five to ten minutes, the effect lasting from one-half to two hours, according to the nature of the case. The blanching effect may be obtained by even a solution of from 1/12,000 to 1/10,000 in from thirty seconds to two minutes. For practical purposes a solution of 1/2000 was found to give the best results in operative work upon the eye, causing no irritation that could be noted upon close observation. A two per cent. solution of cocaine mur. was used ten minutes prior to the instillation of the adrenalin, when operation was contemplated, in order that the effect of the anesthetic might not be interfered with, thus insuring a painless and almost bloodless result.

In ten strabismus operations and one advancement of the internal rectus muscle, two drops of a 1/1000 solution rendered the various procedures almost bloodless fifteen minutes after being dropped on the conjunctiva, a deep as well as superficial hemostatic action resulting. In an operation at St. Michael's Hospital for the removal of an eye, not more than ten drops of blood were lost, and this after five drops of a 1/1000 solution of adrenalin chloride was placed in the conjunctival sac, ten minutes prior to chloroform anesthesia. The effect seemed to extend to the central artery of the optic nerve, thus proving the rapid absorption of the active principle, with control of the deep as well as superficial circulation of the parts. In diseases of the eye with a tendency to iritis or choroidal disease, where an astringent is contraindicated, and in corneal ulceration, adrenalin should not be used; but whenever an operation is required, adrenalin will be found to be an invaluable adjunct.

It is in operations on the nose, throat and ear, that the specific action of the active principle of the suprarenal gland proves its great value as a hemostatic; the tendency to hemorrhage, controllable with difficulty, being one of the drawbacks of the surgery of these organs.

For a number of years the writer has used with great satisfaction various solutions of the suprarenal extract in the removal of septal spurs, cartilaginous outgrowths, septal deviations and hypertrophy of the turbinates, the only drawback being the difficulty of preparing fresh solutions and the danger of irritation which so frequently existed. This, however, has been overcome, adrenalin giving better results without the concomitant disadvantages. The strength used was 1/2000 applied by

means of a cotton carrier, after local anesthesia had been accomplished by a two per cent. cocaine solution.

In this manner a number of large spurs and cartilaginous growths were removed with scarcely any hemorrhage. In addition to the hemostatic action, the contractile power of the drug upon the turbinate tissues greatly enlarges the field of vision for exploratory and operative measures.

For the removal of adenoid vegetation the vault of the pharynx is sprayed by a 1/5000 solution of adrenalin with five per cent. of chloretone, the result being all that could be desired. Except in the case of very small children, the writer never uses a general anesthetic, thus obviating one of the grave dangers attending these operations, the obtunding action of the chloretone being quite sufficient in the majority of cases to render them practically painless. Cocaine is occasionally used in 3 per cent. solution, applied by swab to the pharyngeal vault, where the patient is over twelve years of age.

In hay fever, the treatment of which has been so unsatisfactory, good results have been obtained by a spray of suprarenal extract to the nose, together with the administration of pil. anti-neuralgic (Brown-Seguard), one-half strength, thrice daily; and the use of sod. salicyl. grs. v, pot. bicarb. grs. xx, in aq. menth. pip., t.i.d.

Adrenalin being so much better than the old suprarenal extract, the writer feels confident of the results which will be obtained upon its use during the hay fever season. In tonsillotomy the gland is to be painted by a solution 1/1000 of the chloride, or a 1/5000 solution injected into the tonsil, which renders the removal almost bloodless. In cautery operations on the tonsil the gland melts away like cheese, no hemorrhage interfering with the heating of the point of the instrument, a fact to be greatly appreciated.

As to drawbacks to the use of suprarenal gland extracts, a certain amount of controversy has existed as to the greater danger of secondary hemorrhage after its use, some eminent observers holding that such exists, others claiming never to have noted it. In the writer's opinion the great law of action and reaction holds good, and a slight tendency to after-hemorrhage exists undoubtedly, but is not in any sense dangerous and can be combated with unusual success if the cut surfaces are swabed with a solution of glycerin peroxide of hydrogen and alcohol, equal parts. Another point is to be noted, and that is to be very careful to apply the adrenalin solution only to the part to be operated upon, thus limiting its action. During the past three years six cases have been treated in hay fever patients where a severe pain behind the eyes came on after the suprarenal extract had been used in spray form, as well as uncomfortable sneezing. But adrenalin in normal saline solution has been almost without irritation, according to the experience of the writer.

SO-CALLED REFLEX NEUROTIC SYMPTOMS AND THE PSYCHIC FACTOR.

By TOM A. WILLIAMS, M.B., C.M. (Edin.), Washington, D.C.

AT one time tremendous emphasis was laid upon the irritation of the nerve terminals as a source of neurasthenia, hysteria, and neuroticism in general. Innumerable turbinates have been shaved, appendages removed, and errors of refraction corrected on account of this notion. But extended experience has convinced even the most ardent specialist in rhinology, gynecology, and ophthalmology, when they are possessed of a scientific honesty and clear mindedness, that comparatively few neurotic cases arise from purely reflex irritation.

There is still, however, much confusion as to the genesis of the psycho-neuroses. The source of this confusion lies in the want of clear differentiation between symptoms referable to the autonomic nerves and those which often so closely resemble them, although originated (see the causes of nervous indigestion and *Med. Dom. Jour.*, Nov., 1908, also *Jour. Abnom. Psychol,* Mar., 1909), psychically. A few examples will make this clear.

The abnormal frequency of micturition in the earlier period of gestation has its source, in all probability, in the stimulation of the afferent nerves from the neck of the bladder on account of the stretching of the tissues around the utero-vesical pouch by the rapidly expanding uterus. Any impulse passing by this track is necessarily interpreted as an irritation of the mucous membrane by urine, which experience has taught us to associate with need for micturition. There is really an illusion, comparable to that of one's toes when the nerves are stimulated in the stump of an amputated leg, or in the more familiar "funny bone" experience.

Now the sensations derived from these are t ally unamenable to psychic influences, although, of course, the patient's response to the sensations is modifiable by the will.

Very different is the case of the nocturnal incontinence of children, perhaps one of the most typical of the misunderstandings of the theorem now being illustrated. This affection is purely psychogenetic, for it is due to a failure to educate the cortical inhibition so that it may maintain itself during the relaxation of sleep.

In connection with this, there is another common misapprehension that during sleep consciousness is suspended. That is not the case, as innumerable examples prove. Only two of these need be cited. One is the power which many people possess of appreciating the lapse of time while they are asleep. They can approximately judge the hour when they awake accidentally during the night, and can determine in advance the hour at which they should awake in the morning. Another series of

facts shows that we are not even sensible to peripheral stimulation during sleep. For instance, by stimulation of the skin, muscles or special senses, the contents of dreams can be determined; not only that, but direct ideas can be inculcated in speech, and a psychotherapeutic method has been based upon this fact, especially in childhood—indeed, it had been particularly applied to incontinence of urine, on account of the supposed efficacy of what its exponents are pleased to call the "subconscious." We need invoke no such hypothesis; for suggestion during sleep, hypnosis, or any other passive state is more effective merely because the idea invoked then dominates the field of consciousness uninterrupted by other extraneous stimulations; hence it is much more easy to gain the attention and make an idea penetrate in these states, but the technical skill which we call the persuasive power, is capable of doing the same, with the subject in no matter what state. The problem is merely one of fixing an idea in the patient's mind so that it may energize towards the desired end.

See Psycho Therapeutics: A Symposium, 1910, (The Gorham Press, Boston and Toronto), 1758 K.

THE CANADIAN HOSPITAL ASSOCIATION.

The fourth annual meeting of the Canadian Hospital Association will be held in Montreal, on Easter Monday, and the following Tuesday, March 28th and 29th.

Mr. H. E. Webster, Superintendent of the Royal Victoria Hospital, Montreal, is president.

Dr. Christian Holmes, of Cincinnati, and other eminent hospital workers will be present.

One feature of the meeting will be a visit to the various Montreal hospitals with demonstrations on some special features of their work.

All hospital superintendents and hospital trustees are eligible for active membership, and anyone else particularly interested in hospital work is eligible for associate membership.

For further information in regard to the meeting, application may be made to the secretary, Dr. Brown, Toronto General Hospital.

Copies of last year's proceedings can be had from him on application.

CURRENT MEDICAL LITERATURE.

GYNÆCOLOGY AND ABDOMINAL SURGERY.

Under the charge of S. M. HAY, M.D., C.M., Gynæcologist to the Toronto Western Hospital, and Consulting Surgeon, Toronto Orthopedic Hospital.

CYSTITIS AND ULCERATION OF THE BLADDER IN WOMEN.

John B. Shober (*Ann. Surg.*, June, 1909) say that cystitis due to the presence of microorganisms alone is unknown, but the disease is always the result of traumatism followed by infection by microorganisms. The microorganisms which attack the bladder are the bacillus coli communis, the gonococcus, the tubercle bacillus, the streptococcus, the staphylococci, and the typhoid bacillus. Streptococci and staphylococcic infection of the bladder occurs frequently during the puerperium, especially after long and difficult, or instrumental labors, when the bladder walls may have been injured by long pressure by the child's head, or by overdistention and stretching of the walls of the bladder. The writer describes the treatment which proved effective in a case of this type with several ulcers and marked hyperemia. Ten local treatments were given within thirty-six days, all under cocaine urethral anesthesia with the patient in Trendelenburg position. The bladder was previously irrigated with boracic acid solution and catheterized. The cystoscope was introduced; any remaining fluid was sucked out with a bulb; each ulcer was gently dried with a pledget of cotton on a wood applicator, then it was gently mopped with a weak adrenalin solution to check bleeding; any loose shreds were removed from the ulcers with the bladder forceps; after which each ulcer was touched with a pledget of cotton soaked in a 1 :8 solution of nitrate of silver. The patient was then lowered, the bladder emptied of air, and three ounces of a 2 per cent. solution of protargol was instilled. The patient could usually retain this for a half-hour. These treatments were made every second or third day. She received a daily irrigation of boracic acid solution followed by the instillation of 2 per cent. solution of protargol. Absolute rest in bed was insisted on with a restricted diet, and she drank freely of lithiated water.—*Am. Jour. of Obs. and Dis. of Wom. and Children*, Dec., 1909.

THE SURGERY OF THE GALL BLADDER.

Dr. W. D. Haines, of Cincinnati, after giving a comprehensive survey of the anatomy and pathology of the stomach, duodenum, and pancreas in connection with the surgery of the gall bladder, said, in refer-

ence to cholecystectomy that the first essential was to secure the cystic duct and artery in the grasp of a long hæmostat placed near the junction of the cystic with the hepatic duct. Another hæmostat was placed a short distance before the first, and the cystic duct and vessel were divided. The first hæmostat would control hæmorrhage and the second would serve as a retractor in the succeeding steps of the operation. Incision of the peritoneum for stripping up the gall bladder should be made in the fold where the peritoneum was reflected from the gall bladder to the liver, in order to preserve sufficient tissue to cover the raw surface of the liver. If unusual difficulties presented themselves in ligating the cystic artery, the hæmostat might be left in place for forty-eight hours. The denuded surface of the liver was now covered by peritoneum and a rubber tissue covered drain placed in the bottom of the wound. A large vein sometimes mistaken for the portal was occasionally found crossing the ducts, which, if present, was almost invariably injured in the course of the removal of the gall bladder. It should be clamped, doubly ligated, cut, and the end retracted, as hæmorrhage in the bottom of the wound was difficult to control, caused delay, and added to the shock of operation. In closing the abdomen the peritoneum and posterior sheath of the rectus were included in the first tier by a buttonhole or interrupted suture. Two or three figures of eight silkworm gut sutures should be placed so as to include the muscle, the fascia, and skin, but were not tied until the anterior fascia was closed by continuous catgut.—*N.Y. Med. Jour.*, Nov. 13th, 1909.

PERFORATED GASTRIC AND DUODENAL ULCERS.

Gibbon and Stewart report twenty-two cases of perforations from gastric and duodenal ulcers. They are convinced that success or failure in the treatment of perforated gastric or duodenal ulcer depends almost entirely on the time which elapses between the perforation and its operative repair. Of the thirteen patients operated upon within seventeen hours, all but one recovered, while the remaining nine, all operated upon after twenty-four hours, died. These figures are striking and significant and, moreover, are in fair accord with those presented by other operators. Occasionally, of course, one may be able to save a patient after one, two, or even three days, but these will usually be cases of subacute perforation. The importance of operating as soon as the early symptoms of perforative peritonitis present themselves is evident, whether or not we are able to make a definite diagnosis of their cause. The abdomen should be opened through the right rectus above the umbilicus, an incision which gives the easiest and widest access to the viscera prob-

ably involved. If by chance an incision has been made below the umbilical line it is better to make another one above than to increase the first until the stomach and duodenum can be reached. The first incision should not be closed until the necessity for drainage of the pelvis has been determined by the extent and character of the exudate. If the symptoms have led the operator to make the lower incision and he finds the pelvis filled with exudate and an appendix or a Fallopian tube involved in the inflammatory process, but not in such a condition as to account for the extensive peritonitis, and especially if free gas is present, he should at once turn to the duodenum and stomach and assure himself that a perforation has not occurred. The perforation having been found, it should be rendered as accessible as possible and closed. The method of closure must vary with the character of the ulcer and especially with the degree of induration about the perforation. The next step is the toilet of the patient. The question of irrigation must be determined by the extent and character of the exudate. Drainage is necessary except as occasional cases of early perforation with little and limited extravasation. After treatment varies little from that in any case of peritonitis. —*N.Y. Med. Jour.*, Nov. 13th, 1909.

STERILIZING OF THE SKIN OF OPERATION AREAS.

For this purpose Mr. J. Lionel Stretton (*Brit. Med. Jour.*, Aug. 14, 1909) applies to the skin a solution of iodine consisting of one part of liqui. iodi fort. (B. P.) and three parts of spirit (equal parts of methylated spirit and distilled water). He commenced the use of this method in minor cases, but was soon so well satisfied that he extended it to others. It is carried out as follows: A wide area of the surface to be operated upon is painted with the iodine solution previous to the administration of the anesthetic. It is painted on very freely, especially over hairy parts, and allowed to soak in. It is again painted immediately preceding the operation. After the stitches are inserted they are painted over for a margin of an inch all round. The first and only dressing is usually made on the eighth day; the stitches are then removed, and the line of incision with a margin of one inch is painted with the iodine solution. If for any reason the wound requires to be inspected at an earlier date, it is painted as above described. No previous preparation of any kind is undertaken—no bath, no scrubbing, and no shaving. The latter is an important point, because it saves the patient a good deal of after-discomfort. The chief points in favor of this method are said to be: 1. That is an efficient method of skin sterilization. 2. The surgeon can be absolutely certain that it has been applied. 3. It is quickly and easily

applied. 4. It saves the patient the suffering of a preparation which is at present very lengthy and very disagreeable. 5. It obviates the necessity of shaving, which is unpleasant at the time and causes considerable irritation afterward. 6. It saves an enormous amount of labor upon the part of assistants and nurses, with consequently a lessened expenditure. 7. It saves the cost of preparatory materials and dressings. 8. It can be used in emergency cases where preparation by the usual methods is impossible.—*International Journal of Surgery,* Oct., 1909.

PLASTIC OPERATIONS ON THE ABDOMINAL WALL.

Weinhold declares that too little attention is paid to improving the appearance of the abdomen when a laparotomy is necessary for any cause. It is not enough to restore previous conditions; the shape of the abdomen should be improved if needed. He describes several cases to show the advantages of doing this. In one case he removed 11½ pounds of skin and fat restoring the large pendulous abdomen to normal outlines. After a plastic operation of this kind he orders a stout bandage worn for a year, after which it is no longer necessary. Six illustrations of the technic followed accompany the article.—*Jour. of Am. Med. Assn.,* Oct. 23rd, 1909.

PREVENTION OF NAUSEA.

Watson urges the patient to drink an abundance of water for two days preceding the operation, and receive saline enemas every few hours after the operation, to lessen the thirst, nausea and shock. When not contraindicated by the operation, he says that it is sometimes advisable when other mucus has been swallowed to allow the patient to drink all the water desired as soon as consciousness returns; if this is vomited, the stomach is washed out, and if it is retained the ether mucus is diluted. Another method advocated by Kelly that is often successful in preventing nausea and vomiting following ether narcosis, is to wash out the stomach thoroughly at the conclusion of the operation and then leave in the stomach 6 ounces of a saturated solution of magnesium sulphate.—*Jour. of Am. Med. Assn.,* Oct. 23rd, 1909.

REGARDING SERA.

In the *Journal of the American Medical Association* for 22nd January, there appeared a series of articles on the important subject of sera. The synopses of these papers, as prepared by the *J.A.M.A.*, are here given to our readers.—*Ed. Canada Lancet.*

Federal Control of Serums, Vaccines, Etc.

The law passed by Congress regulating the interstate trade in therapeutic serums, vaccines, etc., passed seven years ago, is explained and its working described by M. J. Rosenau, Washington, D.C. It provides for a complete system of governmental supervision over the establishments producing vaccines, viruses, serums, toxins, antitoxins, and analogous products. This oversight consists in inspections, licenses, and methods of control or testing in the governmental hygienic laboratory. The law requires the proper labeling of the product with its correct name, with the name, license number and address of the manufacturer, and the date beyond which the article cannot be expected to be effective. It also provides penalties of fine or imprisonment and revocal of license for violation of its provisions. This supervision only applies, it must be understood, to interstate traffic in these articles. Before the law was passed it was found that irresponsible persons were making and marketing biologic products without sufficient care or knowledge to insure safety and reliability. Four of these firms were at once refused licenses and went out of business and the applications of others since have been refused for the same reasons. Most of the remainder have been required to modify their establishments or to improve their methods to bring them up to the government sandards. Since the law was adopted there has been great improvement in the potency and safety of the products and it has been enforced without fear or favor. In general, the manufacturers have reached a high state of efficiency. The inspections are made at least once a year and oftener when necessary and include a very searching inquiry into the methods, the personelle, and the efficiency of the equipment. Foreign establishments have to undergo the same inspection before their products are admitted for sale into the United States. The license is issued by the Secretary of the Treasury for the manufacture of a specific product. General licenses, authorizing the manufacturer of more than one biologic product, are not permitted. The government does not guarantee the efficacy of the product. Some serums of as yet unproved efficacy are given licenses, and it is the province of the medical profession to determine their value. Samples purchased in the open market and those obtained directly from the manufacturer are constantly being examined in the Hygienic Laboratory at Washington and if any

are found questionable the manufacturer is required by the Surgeon-General of the Public Health and Marine-Hospital Service to withdraw it from the market. During the past year fifteen establishments were reinspected and relicensed and four additional ones licensed. Certain states and municipalities have found it convenient to manufacture their own products but the general government has not gone further than to exercise a legal surveillance.

Vaccine Virus.

M. J. Rosenau, Washington, D. C., describes the modern method of producing vaccine virus. The caterial is usually taken from the vesicles when fully developed which may be somewhere between the fifth and eighth day after the animal has been vaccinated. It should be taken only from typical unbroken vesicles and is usually obtained by scraping with a curette. The vaccine pulp thus obtained may be purified with glycerin or other substances. Glycerin is best and is mixed with the pulp in the proportion of from 40 to 50 per cent. This acts as a preservative and antiseptic for the ordinary bacteria. It is impossible to exclude some harmless bacteria from the virus, strong antiseptic measures being impracticable we must depend on cleanliness and asepsis in every stage of the production. The old fashioned dry points are more liable to be contaminated and the new federal regulation prohibits interstate traffic with them. Manufacturers have made an imitation of these dry points, which furnishes a very convenient method of vaccinating, by putting a drop of glycerinated virus on ivory or glass points hermetically sealed in paraffin or glass. These are safe and satisfactory. All vaccine virus is tested according to modern methods for virulent germs and these tests include animal inoculations. The tests must be satisfactory before the virus is placed on the market. Special tests are made to determine the absence of foot-and-mouth disease and tetanus spores. All establishments manufacturing vaccine virus for the interstate traffic must be under government supervision. Rosenau makes a plea for the admission of vaccine virus into the Pharmacopeia. It is the oldest and best specific preventive known and a drug in the broadest sense of that term. One advantage would be in giving it an official and legal name to avoid the confusion liable to exist with other substances called vaccines used in therapeutics. Other substances such as diphtheritic serum have been admitted into the Pharmacopeia and vaccine virus is recognized in the Belgian and Swiss Pharmacopeias.

Diphtheritic Antitoxins.

W. H. Park, New York, describes the process of eliminating portions of the non-antitoxin serum substances of the horse serum used for

diphtheritic antitoxin, and says that there are now two globulin preparations thus prepared on the American market. In answer to the question as to whether they have the same curative effects as the whole serum, he says that he has carefully watched the results following the injection of the whole serum and of the Gibson and Banzhalf modification. The rashes and after-effects are undoubtedly much less after the Gibson injections than after those of the whole serum and somewhat less after the Banzhalf modification than after that of Gibson. Curiously enough, certain types of rashes are eliminated. The urticarial reactions still frequently follow. Certain French and Austrian investigators have asserted that the curative value of diphtheritic serum was only partly in the antitoxin and even that the antitoxin was the least important part. Their results would make it seem that the amount of serum rather than of the antitoxin units was effective. These assertions were mainly based on certain animal experiments which have been repeated by the author in Frankfurt and later under Ehrlich's direction. The serums used in Vienna were fortunately obtained by Ehrlich and he was surprised to find that they had been very inaccurately tested. The author's results were exactly the reverse of those of the Austrian investigators and strengthen the conclusion that the antitoxin is practically the only curative element in the serum. This applies also probably to tetanus antitoxins. So far as animal tests can be depended on, Park is positive that the globulin preparation contains all the curative substances of the whole diphtheritic serum and that this is in the antitoxic element.

Tetanus Antitoxin.

J. F. Anderson, Washington, D. C., describes antitetanic serum as that of certain animals, usually horses, immunized to the toxins of the tetanus bacillus. It is marketed in both the liquid and the dry forms. Some manufacturers make also an antitetanus globulin. All tetanus antitoxin sold in interstate commerce in the United States must conform to the official standard adopted by the Public Health and Marine-Hospital Service. The immunity unit for measuring the strength of the antitoxin is ten times the least quantity of antitetanic serum necessary to save the life of a 300-gram guinea-pig for 96 hours against the official test dose of a standard toxin furnished by the United States Public Health and Marine-Hospital Service. This unit recommends itself for its simplicity and is superior to the three European units now being used, which are admitted to be not entirely satisfactory. There is no present standard for veterinary use. Anderson gives a table showing the variations that existed in the unit strength of tetanus antitoxins before the promulgation of the American standard. The antitoxin is used both as a prophylactic and curative agent in tetanus. Used as a prophylactic, the

dose is 1,500 units; as a curative, it should be given in doses of 3,000 to 20,000 units, repeated during the course of the illness. The dried and powdered serum has been used as dusting powder for wounds. The liquid serum is marketed either in syringes ready for use or in glass vials. Each syringe of tetanus antitoxin made by the American producers contains from 1,500 to 5,000 units; the unit value per cubic centimeter varying from 150 to 500 or 600. The affinity of the nerves for the toxin and its subsequent binding by them explains why the antitoxin is often of so little value after the symptoms have developed. It can, however, neutralize any new toxin that may be formed in cases where the focus has not been removed and therefore should be always used in tetanus. Tetanus antitoxin is now recognized in the Belgian, French, and Swiss pharmacopeias. It should also be admitted to the American pharmacopeia, as its value as a prophylactic alone entities it to admission. Anderson sums up the benefits obtained by the federal government control of the therapeutic serum as follows: "1. The physician can be assured that every package of tetanus antitoxin now contains at least the number of units claimed. 2. All serums are now examined for, and are required to be free from, bacterial or toxic contamination. 3. The amount of preservative contained in the serums is not excessive. 4. There has been a progressive increase in the potency of tetanus antitoxin without a corresponding increase in cost. 5. A uniform standard having been established, definite amounts of tetanus antitoxin can be used so that data will gradually be collected as to the amount of serum necessary to be used for immunizing and curative purpose."

Serums and Vaccines.

L. Hektoen, G. H. Weaver and R. Tunnicliff, Chicago, give a brief preliminary report of the results of their study of the various antistreptococcus and antipneumococcus serums and of streptococcus, staphylococcus and pneumococcus vaccines found on the market. The antigenic properties of the so-called vaccines were tested by injections on rabbits with subsequent opsonin determinations. Distinct antigenic properties were possessed by all the streptococcus and staphylococcus vaccines tested. The pneumococcus vaccines were inert in rabbits, so far as the opsonic examinations are concerned. Streptococcus opsonins were not found in any of the serums tested and activation by fresh serums was not accomplished to any extent. Attempt to obtain protective curative effects by antistreptococcus serums in rabbits and guinea-pigs and in a more limited scale in mice, failed. The serums seemed often to reduce resistance and to hasten death. In the antipneumococcus serums it was impossible to demonstrate antibodies for pneumococci. The authors believe hat any claims for usefulness of antistreptococcus and

antipneumococcus serums rest on impressions from results of clinical cases in man, and have in most cases no foundation in experimental tests whatever.

Antirabic Virus.

A. M. Stimson, Washington, D. C., describes the method of preparing and using the antirable virus according to the Pasteur method. According to this method, the spinal cord of a hydrophobic rabbit is dried for a time over caustic potash at a temperature of 23 C. which causes it gradually to lose its virulence. In the treatment, persons who have been bitten by rabid animals are first inoculated with a cord which has lost its virulence and on successive days thereafter with virus from cords that have greater and greater potency. The virus therefore consists of the spinal cord material of the rabbit plus the micro-organism of rabies and its products, artificially modified as to its pathogenic properties. It is administered subcutaneously in emulsion and the immunity induced is of the active type, the patient producing in his own body the antibodies, which are demonstrable in the blood. It has been shown that this virus, like that of smallpox, can be preserved at least three weeks in neutral glycerin or by the addition of antiseptics, which enables it to be sent where it is needed. The treatment is purely prophylactic and has no influence after the disease has developed. The treatment fails in cases in which the incubation period is too short or in some rare cases in which the patient seems unable to develop the antibodies. The treatment usually takes three weeks with daily injections, and is available at about twenty institutions in the country. The virus can also be supplied to the health officers with laboratory facilities by the United States Public Health and Marine Service.

Vaccine Therapy.

The general principles of vaccine therapy are explained by M. W. Richardson, Boston, who also describes its special application in typhoid and other disorders. It is important, he says, to bear in mind, first, the fundamental distinction between passive and active immunity. In the use of a passive immunity the aid to the patient comes from without through an intermediary and the protection given is short, though its immediate power may be great. Diphtheria is the one disease in which passive immunity has proved its worth most emphatically, though almost as remarkable results have been obtained by it in cerebrospinal meningitis and more or less success in dysentery, cholera, typhoid fever, tetanus, snake poisoning, etc. In the use of vaccines, however, we aim to produce an active immunity. Already manufactured immune sub-

stances are not used but we endeavor to stimulate the patient's organism by introducing into it more morbific material so that it may be manufacturing an increased amount of protective bodies to inhibit the growth of the invading germs. Success in this presupposes that the patient is not already overwhelmed with poison and can respond to the added stimulation. To bring about the desired bacterial destruction it must not be made too rapid or destructive so as to aid instead of inhibit the disease process. By bacterial vaccine is generally meant a culture of the special organism sterilized by heat or otherwise and suspended in known proportions of normal salt solution. Living organisms attenuated in number or virulence have been used in a few cases. Theoretically, this would seem to be most effective but manifestly it would be attended with some serious dangers. We should keep in mind, however, the greater efficiency of living organisms in sterilizing the germs so as to change their characteristics as little as possible. Strong, in the Philipines, found that by using plague bacilli of attenuated virulence he could produce a much stronger immunity than is ever produced by dead bacilli, and similar results have been obtained in other diseases by other investigators. As a general rule, it is better to use autogenous vaccines and if good results are not obtained with stock vaccines resources should be had to the autogenous kind. Definite rules as to dosage cannot be given but it is advisable to start with what is below the usual dose and gradually increase. The interval between doses will also vary in different cases. Generally speaking, it is well to allow two or three days between the inoculations. The good results with typhoid vaccines in the British army and its use among United States soldiers are noted. The literature of the subject is gone over and the author gives his own experience with 28 cases of typhoid thus treated. The results of the treatment were not so striking but the effect of the inoculation seemed to be favorable as regards relapses, and he has little doubt of its value as regards this particular feature of the disease. The use of vaccines of *Micrococcus neoformans,* specially recommended by Wright in malignant disease, is mentioned. The Doyen antiserum obtained by the inoculation of animals with this organism is, Richardson says, without utility. There can be little doubt, he claims, that infection from the urinary tract due to the colon bacillus is favorably affected by vaccine treatment. The subjective improvement is often striking and pain and frequency of micturition are quickly relieved. The character of the urine, however, changes but slowly and the complete elimination of the bacteria is rare. Mention is also made of inoculation by Wright and Reed and by Turton, for gall-bladder fistula after operation and with colon bacillus in appendicitis.

Gonococcus Serum and Bacterin.

E. A. Thomas, Philadelphia, says that there can be no doubt as to the value of one or both of these agents in the treatment of gonorrhea and its sequels. While he still makes it a practice to determine the opsonic index in the treatment, he is becoming more and more convinced that it is not necessary and he is therefore governed almost entirely by the clinical symptoms. He emphasizes the necessity of progression in doses, beginning with the minimum and steadily increasing until tolerance is established. Repeated small doses at long regular intervals and too frequent inoculations of too large doses may both cause harm by inducing hypersusceptibility. The best results, he thinks, are obtained by the use of autogenous vaccines, and stock preparations should only be employed when the others are impracticable. When he has used stock vaccines he has used those standardized in the William Pepper Laboratory of Medicine at the University of Pennsylvania. While the bacterins may retain their potency for a considerable period, his experience has shown the best results when they were used fresh and prepared every two to four weeks. He has never seen the slightest good results from pyocyaneus bacterins and would discourage their manufacture.

Tuberculin.

E. R. Baldwin, Saranac Lake, N. Y., says that tuberculin represents the toxin of the tubercle bacillus and is the diametric opposite of an antitoxin. It depends for its diagnostic value on a special sensitiveness acquired by the tissues after a tuberculous infection and the clinical value of a tuberculin reaction is generally proportionate to the smallness of the dose and the quickness and degree of the response. The more recent the infection and the more extensive the disease, the more delicate in the reaction, unless the disease is rapidly progressing or there is grave constitutional weakness. In such cases, tuberculin serves no useful purpose. The reaction occurs with increased frequency as age advances and can be obtained in a large percentage of apparently healthy adults. Repetition of the same or increased dose is capable of arousing a latent sensitiveness from a former or healed disease, hence this method, especially when subcutaneously employed, is mainly useful in excluding active tuberculosis, and the interpretation of positive results must be made with care. They do not necessarily establish the diagnosis of an existing disease which must be made in other ways. He describes the different forms of tests, recommending the cutaneous test of von Pirquet as harmless and most suitable for general use. Other tests may be needed in adults but this is suitable as a preliminary in all cases. The subcutaneous test is the last resource and the most searching in tuberculin diagnosis. At present it may be regarded as necessary in most

cases. Its dangers have been over-estimated but it is potent for harm if carelessly used. It should never be employed when a satisfactory diagnosis can be made otherwise, when a fever of 99.5 F. or over is present, or when the patient has a rapid pulse, gives a history of hemorrhage or has already extensive signs in the chest. It should never be used in suspected Addison's disease. The tuberculin should be fresh and the dosage accurate and if there is the least reaction the subsequent dose should not be increased. The interpretation of the results in tuberculin diagnosis must take into account the size of the dose required to produce the reaction, the promptness with which it develops and the local and general reactions accompanying it. The therapeutic use of tuberculin may be for the following objects: to diminish the sensitiveness to the toxin and to create intermittent local reactions and thus stimulate the disease focus to heal or be absorbed. Baldwin doubts the production of any recognizable immunity, any specific resistance obtained is gradually lost after stopping the treatment. Only patients in a comparatively quiescent stage of the disease are likely to be benefited and progressive tuberculosis of any form is a contraindication. Focal reactions can be best observed and applied with safety when the focus is localized in the skin, bones, joints, etc., and the lungs are not involved. For therapeutic use, the choice of tuberculin lies chiefly between the solutions and emulsions or vaccines. In general, the dosage is more controllable with solutions, and reactions are less frequent from emulsions though, owing to their uncertaain absorption, unexpected reactions may occur if the dose is much increased. The dosage is at present empirical, each individual case must be an experiment and until some standards are established the solutions are the safest. Careful clinical oversight is the most satisfactory guide; opsonic determinations, while useful in the hands of a few laboratory workers are impracticable for the general practitioner. The subcutaneous method is the only satisfactory one for the therapeutic administration of tuberculin. Inunctions have a possible field in the treatment of skin tuberculosis, otherwise they are impracticable. The emulsions have experimentally some immunizing power against the disease in animals but the amounts which can be given with safety in man are too small to produce this effect. The details of the technic of tuberculin injection vary with the preparation used and the experience of different observers. They are therefore not gone into by the author, whose purpose is merely to state the general principles which should guide and safeguard the use of tuberculin.

Inoperable Sarcoma.

L. Loeb, Philadelphia, says of the treatment of inoperable sarcoma by the streptococcus and prodigiosus toxins, that it is a vaccine treat-

ment and differs from certain other vaccines by not being a specific remedy. These two toxins have no etiologic relation whatever to sarcoma, for the cure of which they are employed. The basis of the method of treatment is in this case an impirical one, it was noticed than an attack of erysipelas in persons afflicted with cancer, in a number of cases led to a retrogression of the growth and even to a cure. Certain acute infectious diseases, however, may also cause a retrogression of cancer. Fehleisen, after his discovery of a streptococcus as the cause of erysipelas, made some inoculation experiments in cancer patients with some beneficial results and other surgeons likewise reported cures. The living bacteria were employed, however, and sometimes proved dangerous. It was a step in advance, therefore, when Spronck recommended the use of the toxins instead of the living germs and W. B. Coley only a year afterward began a systematic study of their use in the treatment of sarcoma. Since that time he has persistently continued in this line of work and has improved it by adding the toxins of *B. prodigiosus* to the streptococcus toxins. Later it was found that the toxins did not have to be derived necessarily from the germs of erysipelas and it is even likely that toxins or other bacteria may serve the same purpose. The toxins are injected in gradually increasing doses in a part of the body distant from the tumor, and later, if possible, into the tumor itself. Dr. Coley gives the following data of the treatment in sarcoma: "In 430 cases treated, the tumor disappeared under the influence of the toxins in approximately 11 per cent. of the cases; 6.5 per cent. of the patients treated have remained without recurrence over three years after the cessation of treatment. In 3 out of these 430 cases death followed, probably as a direct or indirect result of the treatment. According to Dr. Coley, in 13 cases of sarcoma of long bones, observed partly by himself and partly by other surgeons, the use of the toxins has rendered amputation of the limb unnecessary; in other cases, however, the toxin treatment was without effect. In a series of 22 cases in which the toxins were used after primary operation, 4 patients are now well after periods of from 3 to 8 years, and 9 after periods of from 1 to 3 years; in 5 cases recurrence took place in spite of the toxin treatment; the remaining patients are still under treatment or the cases are very recent." Loeb has collected the statistics of the experience of a number of prominent surgeons and concludes that the treatment of inoperable sarcoma by this method leads to a cure in approximately from 4 to 9 per cent. of cases, and some results obtained suggest that it may be useful as a postoperative procedure in diminishing the number of recurrences, and that in another certain number it might limit the need for amputation of the limb in cases of sarcoma of the long bones. The manner in which it acts cannot be definitely stated, but it is probable that the toxins and their reactions on the local and general syn-

drone often have an unfavorable effect on the life and growth of the sarcoma cells.

ANTIVENINS.

H. Noguchi, New York, gives the facts of the present medical status of the antivenins. There are three fatal constituents of snake venoms, the neurotoxins, hemorrhagins, and fibrin ferments. In the colubrine snakes the neurotoxins are the most important, as are the hemorrhagins in the viperine snakes. Fibrin ferments are present in both classes, varying with the species. The Australian snake venoms contain all three in pretty equal proportions; the venom of marine snakes contains only the neurotoxins; the Indian and African colubrine snake venoms contain chiefly the neurotoxins with a negligible amount of hemorrhagins. The venom of the pit vipers of America and Asia contains chiefly hemmorrhagins, with secondary amounts of neurotoxins and fibrin ferments. The true vipers owe their poisonousness to the hemorrhagins and sometimes to powerful fibrin ferments in their venoms. Death from snake venom is due to various causes according to the predominating element. The death from the neurotoxins is due to paralysis of the respiratory centers. The fatal issue from the viperine snake bites of India and Australia is due to rapid intravascular thrombosis or secondary poisoning or infection causing marasmus. In the crotaline or rattlesnake bite, death is caused by occasional hemorrhages in vital organs or settling up of cachexia or septicemia. In excessive absorption death may result also from the neurotoxins. The local effect of the rattlesnake bite is very important. The minimum fatal doses of all venoms can be accurately determined by animal tests. It is influenced, however, by the mode of introduction into the body. With the neurotoxins this makes little difference, but the minimum lethal dose of fibrin ferment containing venoms is very much smaller when injected into the circulation than when subcutaneously, and this is also true of the hemorrhagin containing venoms. Hemolytic principles of venom are not important as regards fatality. Each snake has its own particular venom acting in its own way. The neurotoxins of the cobra are different from those of the *Bungarus,* and the hemorrhagins of the rattlesnake are different from those of the copperhead. The fibrin ferment of the daboia venom is entirely different from that of other snakes. This fact is extremely important in employing antivenins. There are several different kinds of antivenins produced, each for a different snake, though two of them, Calmette's and McFarland's, are made up to be polyvalent though their action in that way is a feeble one. The standardization of these antivenins is different according to the different investigators and their methods are briefly described. The therapeutic dosage is large but in practice there are more favorable

conditions sometimes which prevent snakes from injecting their maximum amount. The crotalus bite, for example, according to Mitchell does not very often cause death, and that of the cobra or any other snake may be so little above the fatal dose that a few vials of antivenin may neutralize it. In rattlesnake poisoning, death is not so immediate and we may expect much benefit from its antidote. All antivenins should be administered by injections into the veins or muscular tissues and in crotalus poisoning it is advisable to inject the antivenin both around the wound and intravenously. The favorable effect of a ligature in case of the daboia bite is noticed. The venom causes a quick intravenous thrombosis and prevents the absorption of the rest of the venom into the general circulation and gives a favorable opportunity for the use of the remedy. We must endeavor to get much stronger preparations of antivenins than hitherto. Their utility is naturally increased when used promptly. Only the specific antivenin for the species should be used.

PERSONAL AND NEWS ITEMS.

ONTARIO.

Dr. James H. Richardson left an estate valued at $148,579, to be divided among his four daughters and two sons.

An effort is being made to secure funds for the erection of a sanitarium for tuberculosis at Niagara Falls.

Dr. J. O. Orr, the able and energetic Manager of Toronto's Industrial Exhibition, has had his salary advanced to $6,000.

Hon. Dr. R. A. Pyne, Minister of Education, was laid up with an attack of Rheumatism during the middle of February.

Dr. W. J. Clark, of College Street, Toronto, has recovered from an attack of appendicitis. The appendix was removed.

Dr. Mortimer Haight, after spending two years in Europe, has returned to New Durham.

Dr. Uzzial Ogden, of Toronto, left an estate valued at a little over $36,000, which is divided principally between his widow and daughter.

Last year Toronto had 7,839 births, 3,905 marriages and 5,188 deaths.

Mr. J. C. Eaton has been made a governor of the Toronto General Hospital in lieu of Dr. Orr, who resigned to make a place for him.

Edna Hazel Holmes was sent to the Isolation Hospital in Hamilton for treatment for an attack of diphtheria, while there it is claimed she contracted scarlet fever and died.

Dr. Helen MacMurchy was appointed by the Toronto Board of Education to examine those children who have been designated backward by the principals.

A number of the friends of Dr. George W. Graham, of Toronto, gave him a dinner on the 4th February, prior to his marriage. The function was a very pleasant affair.

John Hoskin, K.C., D.D., Chairman of the Board of Governors of the University of Toronto, has resigned, and Mr. B. E. Walker has been appointed to the vacant position.

Dr. R. W. Bruce Smith, Inspector of Hospitals and Charities for Ontario, has condemned the Protestant Home of Peterborough and has discontinued the government grant to it.

The Wellington County Jail, Ontario, has been condemned by Dr. Bruce Smith, who recently stated that it was not fit for human beings to be put in.

Coli communi were reported in the water a week ago by Dr. Sheard, City Medical Health Officer, Toronto. Dr. Sheard reiterated the statement that it was dangerous to drink the water unless it was boiled.

Toronto Ceneral Hospital treated 5,104 patients. There were 296 deaths. The births in the Burnside numbered 302. The daily cost of patients was $1.37.

At the hospital aid conference held in Brantford, on 17th February, the "United Hospital Aid Association of Western Ontario" was organized. It embraces ladies' auxiliaries in Brantford, Woodstock, Berlin, Stratford, Ingersoll, Welland, St. Catharines and Galt.

The plans have been approved of for the addition to the Toronto Isolation Hospital. The estimated cost is $102,000. The wing will accommodate about 100 patients. The hospital with this addition will meet the needs of the city for the next fifteen years.

The births in Toronto for January, 1910. were 653, the marriages were 280, and the deaths were 463. There were 19 deaths from typhoid fever. These 19 deaths represent a monetary loss of over $100,000 on the average earning power and the expectation of life of these persons.

Dr. A. MacKay, of North Oxford, speaking in the Legislature a short time ago, said that the government should engage a medical man with an aptitude for research to study out a suitable method of treating and caring for epileptics.

Dr. Sheard and the members of the Board of Health of Toronto have been sued for $5,000 by Mr. J. C. Mitchell, whose child was treated for diphtheria in the Isolation Hospital, where it is alleged scarlet fever was contracted. The child was sent home and gave the disease to another of the family who died.

Dr. J. T. Gilmour, Warden of the Central Prison, Toronto, gave an address a short time ago in Belleville on the "Delinquent Problem." He laid stress on the importance of the indeterminate sentence, and urged that these persons be kept as much out of the way of the police as possible when out on parole.

Some time ago a movement was started in St. Catharines to combine with surrounding places to secure a sanitarium for the treatment of tubercular patients. The effort has been attended with marked success and the hospital has been in operation for sometime. It is located on the banks of the old Welland Canal.

Toronto had last year 77 deaths from scarlet fever, 191 from diphtheria, 70 from measles, 30 from whooping cough, 79 from typhoid fever, and 293 from tuberculosis. The deaths from diphtheria are too many in these days of antitoxine. Many of the deaths from typhoid and tuberculosis are preventable.

The Hospital in Brantford is to be managed in future by a board of trustees as a trust and not under the control of the municipality. The new Board will be representative of the City, County, Labor Council, Board of Trade, Medical Profession, and Women's Hospital Auxilliary. Arrangements are made for government representation, life members, and the membership of those donating $500 and over.

The prevalence of typhoid and other sickness has revived the question of the need of hospital accommodation in Ward Seven, Toronto, and the conversion of the old Hayden House into a hospital is again being considered. Representatives of a down-town hospital have an appointment with Mr. Hayden to see if some arrangements can be made to take over the building and run it as a branch hospital.

The Board of Control, Hamilton, a short time ago, dealt with the question of grants to charitable and other institutions, and made a reduction of $5,375, as compared with the amounts that were granted last year. The following grants were made:—Hospital for Sick Children, Toronto, $100; Holy Sepulchre Cemetery, $400; Canadian Army Service Corps, $50; Army Medical Corps, $50; 13th and 91st Regiments, $250 each; Veteran Firemen, $50; Teachers' Institute, $25; Salvation Army Band, $100.

The County Council of Brant has voted $250 as a grant to the King Edward Sanitorium for Consumptives. This sum covers a period of one year, or in other words the King Edward Sanitorium undertakes to provide twelve months' care and treatment for such patients as the county may send to the institution. Mr. Geo. H. Hees, of Toronto, has shown his interest in the work at Weston by sending his cheque for $250, to be used as an endowment of a bed for one year at the King Edward Sanitorium.

One hundred and two cases of typhoid fever have been reported so far this month to Dr. Sheard, City Medical Health Officer for Toronto. In February, 1909, there were only ten cases for the whole month. In February, 1908, there were fourteen cases, as against twenty-three in February, 1907. The typhoid fever record this present month is the highest in February since 1893, when the contamination of the water by sewage in consequence of the pipe rising to the surface of the bay resulted in 111 typhoid fever cases in the city.

QUEBEC.

Dr. Guerin was elected Mayor of Montreal by a majority of nearly 13,000 out of a total vote of about 46,000.

It is proposed in Montreal to deal with tuberculosis patients by the city paying $2.50 a week per patient to several institutions now in existence and that are willing to care for consumptives for this sum.

At Verdun, in Quebec, a simple and satisfactory system of water filtration has been installed, the result is that for over three months there has not been a single case of typhoid fever in that place.

The body of the late Sir George Drummond was cremated at the Mount Royal Cemetery. He was a firm believer in this method of disposing of the dead.

Dr. J. J. Guerin was elected mayor of Montreal on 1st February. With Dr. Guerin for Mayor and Dr. La Chapelle on the Board of Control, Montreal, has some hope of securing pure water.

In his report on the Verdun Protestant Asylum, Dr. Burgess states that 197 were admitted last year. The total number under treatment was 783. Dr. Burgess suggests that there should be some way of caring and looking after those who are discharged from the Asylum.

It will be a pleasure to all lovers of good city government to learn that Dr. E. P. La Chapelle, of Montreal, after a hard fight, won a seat on the Board of Control for that city. Dr. La Chapelle is a high authority on sanitary matters and his influence will be felt in the right direction.

WESTERN PROVINCES.

There is a violent epidemic of typhoid fever at Pilot Mound, Man., twenty-five cases having originated within one hotel there.

Dr. P. D. Tyenman, who has been in Prince Albert, Sask., for many years, has been spending the winter in Toronto.

The Manitoba Medical Association will meet this year on 26th and 27th May.

Dr. Harvey Smith, of Winnipeg, recently paid a visit to Toronto and Ottawa.

Prince Albert, Sask., is to have a new hospital of 100 beds and costing $100,000.

Physicians throughout the western provinces may now ride on freight trains on the C.P.R. when making emergency calls.

Mr. Elihu Stewart, who has travelled a good deal in the far north, said a short time ago, to the Canadian Club of Toronto, that a hospital was very much needed in the far north, say at Fort Simpson, on the MacKenzie River. He gave many instances of the urgent need for this.

A bill is at present before the Manitoba Legislature to attempt to solve in a measure the problem of charity patients, which is yearly becoming a more serious one for the hospitals to cope with. It is now proposed to compel young men to pay for hospital attention, and to make such charges collectable before a Magistrate. Hitherto many young men have been in the habit of evading bills for attention, although they have been known to be earning good wages. The legislation will not apply to females in any way.

BRITISH COLUMBIA.

Dr. Brydone-Jack, of Vancouver, has been appointed medical officer to the schools in that city.

The Royal Jubilee Hospital in Victoria is seeking government aid for a wing for tubercular patients.

The site for the University of British Columbia is to be chosen by a commission. Hon. Dr. Young will likely name on the commission some from Queen's and Laval Universities. It is thought that he will not appoint any one from Toronto or McGill Universities, owing to some rivalry between these latter in the matter of university education in the province.

The courts are being asked to dissolve the will of the late Dr. Stevenson, in which he bequeathed property valued at $150,000 to a fund providing pensions for destitute women in the city of Vancouver. A peculiar condition of the pension was that the beneficiaries must have been resident in Vancouver for five years and must not be members or adherents of any Christian Church. Relatives bring the action on the ground that the testator was of unsound mind.

MARITIME PROVINCES.

Tuberculosis is far too common in Newfoundland. For this there are many causes. It has become compulsory to report to the Medical Health Officer at St. John's all cases coming within the observation of medical practitioners. A fee of 30 cents is allowed for each report.

In the Maritime *Medical News* for December last, there appeared an editorial which looks as if the journal of the eastern provinces would

go out of existence at an early date. This will surely not be found necessary. Every doctor in the east would find it to his advantage to subscribe for the Maritime *Medical News,* no matter whether or no the Canadian Medical Association issues a journal.

FROM ABROAD.

From the Yerkes observatory the information is given out that Halley's Comet contains cyanogen. This is a very powerful poison.

The headquarters of the Rockefeller Commission on Hookworm disease has been established in Washington, D.C.

Dr. J. M. Cochrane, who graduated in Toronto in 1884 and has been in practice in London, England, for 20 years, died recently.

A couple of weeks ago the medical supplies in New York of the United States Army was destroyed by fire. The loss is estimated at $1,000,000.

Dr. T. S. Clouston, who was at the head of the Royal Edinburgh Asylum for the Insane, for so many years, had his portrait presented to the Royal College of Physicians, recently.

The following interesting statement of the leading causes of death in Chicago is for week ending 4th February: Typhoid fever 17, cancer 30, diphtheria 101, tuberculosis 135, pneumonia 150, scarlet fever 181.

In Sweden a number of sanaoria for the treatment of tuberculosis have been established by various industrial concerns. The workmen of these firms are sent to these sanatoria for treatment.

Dr. Woodruff, of Long Beach, California, ruptured a blood vessel while trying to support a 200 lb. patient, who was about to roll off the operating table. He died shortly afterwards.

A committee has been formed for the purpose of studying the nature of pellagra. Among those on the committee are the Marquis of San Guilliano, the Italian Ambassador, and Sir Thomas C. Allbitt. It is proposed to send Dr. Sambon to investigate the disease.

William Bateson, Professor of Biology at Cambridge, in a lecture on the heredity of sex before the Royal Institute, stated that he was a firm believer in the general opinion that daughters resembled their fathers, and sons their mothers.

Nearly everyone is familiar with the forced feeding of the suffragettes in Britain who refused to take food. This act does not reflect credit upon either the government or the doctors in charge of the prisons.

Sir Victor Horsley, in a letter to the *B. M. J.* for 22nd January, condemns the recent method of the forced feeding of suffragettes. He raises the right of political offenders, and the right of prison doctors to comply with regulations calling upon them to feed by force.

Thomas Dixon Savill, of London, died 10th January, as the result of a fractured skull due to a fall while riding. He was the author of several well-known works, namely, Clinical Medicine, Neurasthenia and Hysteria.

Sir Alfred Jones, who was at the head of the Liverpool School of Tropical Medicine, has left an estate worth about $3,000,000. His trustees are empowered to use most of the estate for charitable purposes in England, in British possessions on the west coast of Africa.

Dr. George Skene Keith, who practised in Edinburgh for many years, died on 12th January at the advanced age of 91. He was the elder brother of Thomas Keith, who did so much to place ovariotomy on a firm basis. He was also the author of two well-known little books, "The Fads of an Old Physician," and "A Plea for a Simple Life."

In India the subject of malaria is receiving much attention. A short time ago there was a convention at Simla as to the best means of preventing the disease. Both the medical profession and the government are asking a keen interest in the matter. It is hopeful that much good will come out of these efforts.

In Italy capital punishment was abolished years ago and in its stead solitary confinement substituted. The first five years of imprisonment is spent in the strictest seclusion, where the prisoner does not see a human being, and is not allowed to read anything, nor speak to himself. This form of punishment leads almost invariably to insanity.

The spread of pellagra in the United States has given rise to much alarm. A society has been organized for the investigation of the disease. This Association held its first meeting some time ago in Columbia, South Carolina. It was the opinion of those who participated in the discussions that the disease is caused by spoiled Indian corn and spirits distilled therefrom.

In *The Medical Press and Circular* there is an editorial on "Medical Care of School Children." The article claims that much good has already resulted from the medical inspection of school children. The relationship of the state to the health of the children in the schools is now being recognized. A wider knowledge of child life is being obtained and an insight into the homes they come from.

Dr. Bertillon, the eminent French Statistician, recommends early marriage as a means of promoting both health and longevity. He states that among unmarried men of the ages 35 to 40 the death rate is 19 per 1,000, whereas the married it is only 8. From the ages 55 to 60 it is 41 in the former and 23 among the latter. He contends that the regular life of the married accounts for this. Similar results pertain among women.

OBITUARY.

J. M. PIPER, M.D.

Dr. Piper, who practised for over twenty-four years in London, died in Toronto on 7th February. He disposed of his practice about four years ago and retired to Toronto. He had been quite ill for three months previous to his death. He graduated from Victoria University. After graduation he located in London South. He was married to Miss Boddy. of Toronto, who survives him. He was Surgeon-Major of the Seventh Regiment, and on coming to Toronto became Surgeon-Major to the Governor-General's Body Guard. He took an active interest in fraternal societies and belonged to the Masons, the Chosen Friends, the Royal Arcanum, and the Independent Foresters. Drs. D. H. Piper and W. A. Piper, both of London, are brothers.

W. D. NEWELL, M.D.

Dr. Newell died at Sarnia on 11th February, after a rather lingering illness. He had suffered for a number of years from rheumatism. Latterly he became afflicted with Bright's disease. He graduated from Trinity University in 1888. He was a native of Middlesex County, where he received his early education. Until his health began to fail he had the confidence of a wide circle of acquaintances from which he drew a large practise.

WILLIAM TELFER, M.D.

Dr. William Telfer, who had lived and practised his profession in Montreal for many years and was well known there, died a short time ago at Burgoyne, Que. He was in his 46th year and a graduate of McGill.

BOOK REVIEWS.

DISEASES OF THE EAR.

Handbook of Diseases of the Ear, for the use of Students and Practitioners, by Richard Lake, F.R.C.S., Eng., Surgeon, Diseases of the Ear, etc., London School of Clinical Medicine, Surgeon Royal Ear Hospital. With four coloured plates and 66 original illustrations. Third edition, London: Baillière, Tindall and Co., 8 Henrietta Street, Covent Garden, 1910. Price, 7s. 6d. net.

This is a thoroughly carefully-prepared book, by a highly competent writer. This is not a large book, but it is a veritable *multum in parvo.* Everything is to be found here. The author can state his views on each section in brief but clear language. The illustrations are excellent, and the treatment the most approved. The author has had such extensive personal experience that he can appraise properly what he should use from the writings of others. To our judgment the book is *perfection.*

SPONDYLOTHERAPY.

Spinal Concussion and the Application of other Methods to the Spine in the Treatment of Disease. By Albert Abrams, A.M., M.D., F.R.M.S., Consulting Physician to Mount Zion and French Hospitals, San Francisco; formerly Professor of Pathology and Director of the Medical Clinic, Cooper Medical College, Medical Department of Leland Stanford Junior University, San Francisco. Illustrated. The Philopolis Press, Suite 406 Lincoln Buildings, San Francisco, California. Price, $3.50.

Dr. Abrams is a well-known writer on medical subjects. When he, therefore, takes up a somewhat novel subject one looks for something interesting. The present volume is quite interesting, as it deals with a very important topic which has received but little consideration. In the first chapter the author deals with the historical side of his subject. He dates the first real attempt on this sort of treatment with the book of the Griffin Brothers in 1834. The second chapter discusses the anatomy and physiology of the spinal cord. In this chapter there is much interesting matter upon the cord and its reflexes, and how its vascular supply may be modified. The symptoms that one should look for as those likely to arise from conditions suitable to this form of treatment are next given. The spinal symptoms are then taken up fully in the next chapter. General spondylotherapy forms the subject of the ensuing chapter. In this chapter there are comments upon acupuneture, electricity, massage, lumbar puncture, psychotherapy, thermotherapy, etc. In his next chapter a good deal of attention is paid to pseudo-visceral diseases. Among these he mentions neuralgia, intercostal neuralgia, pseudo-appendicitis, pseudo-cere-

bral disease, pseudo-angina, pseudo-dyspepsia, etc. The circulatory, respiratory, digestive systems are taken up in turn. The book ends with a chapter on the therapeutics and diagnosis of pain. The author claims good results in the treatment of disease by the judicious use of heat, cold, electricity, percussion, etc., to the various regions of the spinal cord. The book is an interesting one, and may be the means of directing the attention of the medical profession to a portion of the therapeutic vineyard where some really good fruit may be found. We commend the book for careful study.

THE STOMACH, INTESTINES AND PANCREAS.

The Medico-Chirurgical Series No. 2, by W. C. Bosanquet, M.A., M.D., Oxon, F.R.C.P., Assistant Physician to Charing Cross Hospital and to the Brompton Hospital, and H. S. Clogg, M.S., Lond., F.R.C.S., Eng., Assistant Surgeon Charing Cross Hospital, and Senior Surgeon to the Evelina Hospital for Children. Edited by James Cantlie, M.A., M.B., C.M., Aberd., F.R.C.S., Eng., Surgeon Seamen's Hospital Society, and Lecturer on Surgery to the London School of Tropical Medicine. London: John Bale, Sons and Danielsson, Oxford House, 83-91 Great Titchfield Street, Oxford Street, W., 1909. Price, 12s. 6d. net.

This is a very handsome volume. Indeed, it is a model in this respect. The paper is of a superior quality and takes the impressions of both type and cuts in such a manner as would please the most exacting critic. The binding is good, being of limp leather, of a dark green, while the edges of the paper are in rich red. The authors deal with the diseases of the stomach, intestines and pancreas, from the medical and surgical side. The whole field is covered in 660 pages, 12 mo., so it will be seen at a glance that the authors cannot afford to be prolix. One of the merits of the book is that it combines such clearness with such brevity. We think we have here about the acme of book making. Each portion of the work has been handled by the authors with much care. They have shown a thorough acquaintanceship with the literature of their subject, and they have added their own wide experience. We like the book and consequently recommend it highly.

STUDIES IN TUBERCULOSIS.

By Henry Clarke, M.A., M.D., Contab., Physician to the Liverpool Hospital for Consumption and Diseases of the Chest, Superintendent of the Research Laboratory of the Hospital, Councillor of the City of Liverpool. Liverpool: At The University Press. London: Archibald Constable & Co., 10 Orange Street, Leicester Square; W.C. Toronto: Copp, Clark & Co.

The author discusses his subject under the Diagnosis of Tuberculosis, the Prevention of Tuberculosis, and the Treatment of Tuberculosis.

The record of 40 cases treated with tuberculin is given. Under the head of prevention, the author holds the autenatal infection has been proved beyond doubt. With regard to postnatal infection he states that it may be by intimate contact, or remoter infection. Infection may be through food, as the bovine vacillus is virulent to man. Factors that increase susceptibility are race, family, climate, age, social condition, previous disease, the author holds that "All that is required is the eradication of tuberculosis in cattle, and the compulsory notification and segregation of all consumptive patients." With regard to tuberculous cattle the author thinks they should be destroyed and the loss borne by the state. In some places notification has become the rule and efforts are being made for the segregation of the sick. Then much may be done by education. The author speaks well of the judicious and early administration of tuberculin in the forms T.R. and bacillus emulsion. The book gives evidence of much care in preparation.

MODERN ASTRONOMY.

Being some account of the Revolution of the Last Quarter of a Century by Herbert Hall Turner, F.R.S., Savilion Professor of Astronomy and Fellow of the New College in the University of Oxford. Popular Edition, London: Constable & Co., 10 Orange Street, W.C., Price, 75 cents. Toronto: Copp, Clark & Co.

On the theory that every professional man should read something outside of his own immediate professional work, this little book affords an excellent opportunity for such. We have enjoyed very much the perusal of Professor Turner's Modern Astronomy. The book is readable, clear, and instructive. This is a good recreation study for a doctor.

MILK COMMISSION.

The Report of the Milk Commission Appointed to Enquire into the Production, Care and Distribution of Milk, 1909. Printed by order of the Legislative Assembly of Ontario. Toronto: Printed and published by L. K. Cameron, Printer to the King's Most Excellent Majesty, 1910.

The subject matter of the report is dealt with under the headings of Formation of the Commission, Laws, Dairy Farms, American Cities, Copenhagen and London, Laws of the Provinces and States, Commercial Value of Sanitation, Infantile Mortality, Conclusions and Recommendations. The report is far above the average of such reports as a rule. The matter has been carefully collected and carefully arranged. This report should be widely read. We would like to see a copy of it in every

medical practitioner's possession. The just step towards and useful reform is education. It will take some time before the old time dirty dairy can be abolished. Towards this and such information as is contained in this report will do much. It is no exaggeration to say that death lurks in the milk can. Dirty and bacteria-laden milk has caused thousands of infant deaths. In Ontario the infant mortality is 161 under 1 year to every 1000 births. This is altogether too high for the cities of Ontario.

MISCELLANEOUS.

LADY GREY HOSPITAL.

The new Lady Grey Hospital established in Ottawa through the efforts of the Ottawa Anti-tuberculosis Society was opened on 15th February, by Earl Grey. Speeches were delivered by his Excellency, Mayor Hopewell, Hon. W. J. Hanna, George H. Perley, M.P., and others.

Hon. Mr. Hanna said that an appeal had been made to the Provincial Government to take up the subject of the treatment of tuberculosis. The best way of dealing with the disease was, however, through local effort and local responsibility, as was the case in Ottawa. The Ontario Government had endeavored to encourage the people to undertake the work of stamping out consumption and had disseminated literature and established a tuberculosis exhibit of great value.

A PASTEUR INSTITUTE.

Several medical men, representing the Academy of Medicine, waited on the Provincial Cabinet recently and asked that a Pasteur Institute be established in Toronto, in connection with the University. The deputation was composed of Prof. McKenzie, of Toronto University; Dr. R. A. Reeve, Dr. J. F. Goodchild, Dr. R. J. Hamilton, Dr. R. D. Rudolf, Dr. Alex. McPhedran and Dr. Gideon Silverthorne.

In view of the fact that there is quite a "mad dog scare" in the province at the present time, and that many victims of dog bites have gone to the Pasteur Institute in New York for treatment, the medical men contend that such an institute should be established in connection with the University. If an institute was established it would be possible to obtain the serum, which cannot be exported from the United States.

A GOODLY GIFT.

Mr. J. C. Eaton's gift of $250,000 for the construction of the surgical wing of the new General Hospital is an announcement that will be learned by all sections of the community with unqualified pleasure and general congratulation. Mr. Eaton designs his gift to be associated with the memory of his father, and it will be felt that there could be no more gracious monument to recall the greatest and most enlightened merchant Toronto ever produced. He built up a business on new lines and on new principles, and in doing so amassed a great fortune, and it is not difficult to conceive of his saying to his son and successor, "Well done!" at this announced employment of a portion of that wealth.

There is perhaps no form of benevolence that appeals to the public with greater force than the endowment of institutions intended to minister to the sick and suffering. Men and women, while health is still preserved to them, can endure the other afflictions of life with courage and philosophy, but when the very citadels of life in this delicately compacted frame of ours are assailed, hope ebbs and the whole world seems dark. Too often ill-health brings other dire evils in its train—loss of employment, stoppage of earnings, deprivations in the home, the death of ambition, and the clouding of the outlook for the future. At such a moment citizenship in a community where the bounties and benevolences of life have not been neglected is a valuable thing. To this common value Mr. Eaton has made this munificent contribution. May it be, as it certainly will be, a constantly pleasant thought throughout what we may well hope will be a career as extended as it is useful and helpful.—*The Globe.*

THE ANNALS OF SURGERY COMPLETES ITS FIFTIETH VOLUME.

The December number of the *Annals of Surgery* (Philadelphia), which completes the fiftieth volume of that journal, is worthy of more than passing notice. It is a jubilee number, and, by its size and the character of its contents, fiftly marks so important an event in its history. The cosmopolitan character of the journal is seen from the list of contributors, which comprises the leaders in surgery of England, Scotland, Denmark, France, Italy, Hawaii, Canada, and the United States.

Twenty-two articles form a number of more than four hundred pages. The illustrations, some of which are colored, are profuse, making a volume which merits the term of a jubilee number. Such an event in the history of any medical journal is worthy of note.

CURIOUS PRACTICES OF THE CHINESE DOCTORS.

It is the custom of a chinaman to visit his barber every week to have a general overhauling. First, the head and face are shaved; second, the ears are scraped and cleaned with a small brush made of duck's hair; third, the upper and lower eyelids are scraped with a dull-edged knife, all granulations being smoothed away, and then an application is made with a duck's hair brush of salt solution. This is the reason why you find so much blindness in China. They take no antiseptic measures whatever. All instruments are held in the operator's mouth during the progress of operation. Finally, the patient's back is massaged, and after paying a fee of three cents and no tip he leaves the shop, feeling clean outside, but now must consult his regular physician.

After going through the usual examination, which is a form of military inspection, the doctor diagnoses the case and treats it unless a devil happens to jump down the patient's throat. If this has happened the doctor can do the patient no good until he promises to set off 100 firecrackers and to make a daily visit to the joss-house. This done, he receives the usual pills for those vacated by the devil. These pills may consist of spotted rhinoceros horns, said to be a wonderful cure for intestinal troubles. The spotted rhinoceros horns come from southern China, and in the market at Singapore a single specimen will bring $25. Tiger bones, when ground to a powder and mixed with Chinese wine, make a great blood tonic, which is used by all classes of Chinese in northern China. The recipe is held by a firm in Shanghai that has become very wealthy by the sale of this tonic.

Old deer horns are boiled down to make the medicinal glue which binds the fifty ingredients composing the average Chinese pills. As in these you may get anything from a pinch of gunpowder to powdered cobra tail dust, it is not the fault of Wong Yik Chee if just the right kind of specific escapes the patient.

Equal in medicinal efficacy to the above are three high-grade tiger remedies, the eyeball, liver and blood. As may be imagined, tiger eyeball, the genuine article, can be prescribed for only the exceedingly wealthy Chinese. Similarly the liver when dried and reduced to a powder is worth its weight in gold all over China. Tiger blood, when evaporated to a solid at a temperature of 110 degrees and taken as a powder, is believed by Asiatics to transform a craven into a hero.

After the patient has made the rounds of the barber and the travelling physician he now looks up his dentist, whom he will find on any street corner in all large Chinese cities. You are greatly impressed by the seriousness of this gentleman, who is always reading and thinking

of his collection of some two thousand teeth on a table and a few bottles of some secret drugs, which upon inquiries a Chinese interpreter told a visitor contained the moisture of the inner side of an old coffin which was collected after being buried some ten years. A dentist in China is called a "boxer" by all Chinese, for he is supposed to have great strength in his arms and hands, and also some great magic power.—*Medical Record*.

MEDICAL PREPARATIONS, ETC.

THE MINERAL WATERS OF NEUENAHR.

By Dr. K. GRUBE, Villa Winifred, Neuenahr.

The use of mineral waters as a means of curing diseases has been known for centuries. There is hardly a chronic affection for which one or the other of the differently constituted mineral springs has not been recommended, and there cannot be any doubt that often the use of these waters has proved beneficial where other resources of medical treatment have failed.

It is often difficult to determine wherein the specific effect of the water lies, seeing that waters differing in their constituent parts produce the like result on a given disease; while on the other hand waters containing with slight variations the same substances act favourably on diseases of very varied kind.

We are therefore obliged to assume that the action of waters even when chemically differing, and on various diseases, is to a certain extent the same.

In the following lines we intend to give in brief outlines the indications for the use of the waters of Neuenahr, a health resort in Germany, which has of late acquired a great reputation in the treatment of various diseases.

Neuenahr is a small town situated in a broad valley along of the river Ahr, twenty minutes by rail from the Rhine and one hour from the university town of Bonn. It lies at the foot of a tree-clad hill, from which there extend miles of wooded country, affording a great variety of walks and charming surroundings.

The soil is chiefly gravel; the drinking water is free from contamination, and the town is just improving its drainage by laying a new system of drains. The resident population is healthy, and epidemics have been practically unknown for a long time.

The season lasts from the end of April till the beginning of October. The climate is equable, the air is mild and fairly dry. The mean temper-

ature for the 3 summer months is 65° F. There are no evident changes of temperature toward evening and out of door life may be enjoyed until late at night almost from the beginning of May till the middle of September.

There are two important springs, the waters of which are used internally and externally. Their water is alkaline and contains the usual ingredients of that class of mineral waters, viz., the bicarbonates of alkali in which bicarbonate of soda predominates. There is besides a certain amount of arsenate of soda and oxide of iron. The waters are thermal in character and contain free carbonic acid in varying amounts.

The two chief sources are: The Great Sprudel with a temperature of 96.1° F., and the Willibrordus Sprudel with a temperature of 95.36° F.

The water is clear and sparkling, acidulous and slightly ferruginous in taste. It has a powerful diuretic and a slightly aperient action.

The use of the Neuenahr waters may be recommended in the following cases:

1. Chronic catarrh of the mucous membranes of the respiratory system, whether with difficult expectoration or with increased but moderate secretion and atony, as well as in chronic catarrh of the stomach, bladder and bowels.

2. In cases in which increased diuresis and perspiration, a general improvement of the circulation, and more active assimilation are to be produced; but where on the other hand weakening of the heart and a changed character of the blood, which may accompany the ingestion of too great an amount of alkalines, especially of the sulphate of soda are to be avoided.

3. Increased acidity of the stomach, such as occurs in some forms of dyspepsia.

4. Moderate dilatation or an atonic condition of the stomach with or without increased acidity, as, for instance, may be observed in gouty persons.

5. Cases of pathological deposits, which require to be eliminated.

The waters of Neuenahr may accordingly be recommended in diseases of the respiratory and digestive organs, of the genito-urinary system and in such constitutional affections as the uric acid diathesis, gout, rheumatism and diabetes.

There are several pathological conditions which contraindicate the use of these waters and which may be briefly mentioned as follows:

1. Cases of severe irritation and hyperaemia of the n. ous membranes generally, specially in persons with a tendency to haemorrhage of stomach, bowels, kidneys and bladder.

2. In cases of advanced atheroma accompanied by giddiness and headache as constant sy...ptoms, or when frequent nasal haemorrhage occurs spontaneously in aged persons.

3. In cases of debility accompanied by considerable irritation of the vascular system generally and,

4. When confirmed heart-disease exists.

The special diseases for which the waters of Neuenahr are well adapted are:

I. CONSTITUTIONAL DISEASES.

(*a*) Diabetes mellitus, especially the milder forms of middle aged and gouty persons.

(*b*) Gout, especially visceral and irregular gout, gouty dyspepsia and gouty affections of the liver and the kidneys.

(*c*) Rheumatism.

II. DISEASES OF THE RESPIRATORY ORGANS.

(*a*) Chronic laryngitis and pharyngitis.

(*b*) Chronic bronchial catarrh. In these diseases the internal use of the waters is aided by the use of inhalations and various douches.

III. DISEASES OF THE DIGESTIVE ORGANS.

(*a*) Chronic catarrh of the stomach and bowels if arising from an acute attack of catarrh of these organs.

(*b*) Chronic catarrh caused by gout, uterine diseases, chlorosis, Bright's disease and disorders of the liver.

(*c*) Chronic catarrh of the intestine, particularly with atony of the bowels.

(*d*) Chronic diarrhoea, if not caused by dysentery or tubercular disease.

IV. DISEASES OF THE LIVER.

The waters of Neuenahr rank highly among the alkaline waters which are known to be beneficial in the treatment of these affections, especially in cases of

Gallstones,

Catarrh of the biliary ducts,

Congestion of the liver and

The initial stage of cirrhosis of the liver.

V. DISEASES OF THE URINARY ORGANS.

(*a*) Vesical catarrh.

(*b*) Catarrh of the pelvis of the kidney.

(*c*) Gravel.

(*d*) Chronic Bright's disease.

VI. Various Inflammatory Conditions of the Female Sexual Organs, as Metritis and Endometritis, Inflammatory Exudations of the Pelvis and Menstrual Irregularities.

Neuenahr owns a bathing establishment which for its size, practical arrangements and comfort must be regarded as a model institution. There are to be found all forms of bath from the simple mineral bath to every other form used for hydro-therapeutical purposes, including sand—and mud baths, light and electrical baths.

There are inhalation rooms for the various systems of inhalation, and there is also an installation for the application of the Roentgen rays.

PRECAUTIONARY MEASURES.

As every physician has constantly under his care cases of either typhoid, malarial or bilious fever, it is well to remember that precautionary measures are possible, and if taken in time, much of the trouble with these cases is avoided. If it be true that the materies morbi of these diseases belong to the bacillus group, the remedies manifestly are an antiseptic and an antipyretic. As an intestinal antiseptic we have nothing better than salol. The consensus of opinion is in this direction. When we add the antipyretic and anodyne effect of antikamnia, we have a happy blending of two valuable remedies, and these cannot be given in a better or more convenient form than is offered in Antikamnia and Salol Tablets, each tablet containing 2½ grains antikamnia and 2½ grains salol. The average adult dose is two tablets. Always crush tablets before administering, as it assures more rapid assimilation. As the necessity of intestinal antisepsis in the treatment of this class of diseases is fully recognized, would not the scientific treatment of the conditions preceding them be the administration of the same remedies? Fortifying the system against attacks is the best preventive of them.

THE POSTUM CEREAL COMPANY BATTLE CREEK, MICHIGAN.

In the early part of January of this year an attack was made upon this company. The statement was made that in a certain train wreck three car loads of empty pea-nut shells were found consigned to the Postum Cereal Company of Battle Creek.

The company has very promptly denied this; and has taken steps to prosecute in all such cases. The company has made a forfeit deposit of $5,000 if it can be shown that the Postum Cereal Company uses pea-nut shells or trash of any kind.