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EDITORIAL

EUGENICS, EUTHENICS, HYGIENICS.

Here we have three great words, words that have been formed from the greatest of all languages, the Greek. Eugenics has attracted much attention for some years, and deservedly so. The study of heredity is a study of vast importance, no matter whether we follow the Darwinian school, Daltonism, or that school of thought led so ably by Weismann. There is much in heredity, and the experienced breeder mates healthy animals. Eugenics means to be well born in the sense of good ancestry.

Euthenics on the other hand deals with environments, and rearing. No matter what the heredity may be, the best may be blighted by bad environments, training, food and so on. In the same manner, much that is faulty by inheritance may be improved and elevated by favorable conditions. So then euthenics and hygiene blend themselves with the conditions that improve the human being after it has come into the world.

But right here euthenics and eugenics blend into the halves of a blessed pair. By careful and prolonged attention to euthenics the individual is vastly improved, both physically and mentally. This shows itself on the next generation. The euthenics of to-day is the eugenics of to-morrow. So then begin now and improve the growing child; for the child is father of the man, and the man is the father of the future child. How long this simple truth has lain dormant! The fact that it is so simple does not lessen its value, but to all lovers of true progress there is genuine pleasure to be found in the fact that so many distinguished persons are now holding a brief for the child.

When slums are abolished in cities, when schools are sanitary, when workshops are healthy, when children are properly taught, when they receive proper food, when they are supplied with proper clothing, and when the moral atmosphere in which they move and have their being is proper, then will there be true progress, and eugenics will be within our vision.

CONTROL OF VENEREAL DISEASES.

How best to control the spread of venereal diseases has long engaged the attention of many earnest and honest workers for the public weal. On this topic as on almost all others, there have been wide differences of opinion. Some have taken up the position that there should be recognized houses; others that cases of venereal diseases should be reported; and others that there should be free dispensaries for the treatment of these diseases. All these methods have been tried at some time, or in some place. Quite recently Abraham Flexner, who has been studying this subject in Europe under the foundation of John D. Rockefeller Jr. has issued the result of his observations. He declares that police regulation of the evil is a failure and in Europe is fast dying out. Europe, we are told, is a man's domain, has been long ruled by man for his own advantages. He has long ruled and in a very selfish way. The vast majority of depraved women in Europe live beyond the range of police control. Licensed resorts do not effect segregation, and the evil goes on unabated. Segregation is no longer practised in any large European city. It has also been found to be inadvisable, as no attempt at thoroughness in this direction is possible. But this method has been found to give to vice undue prominence. Finally, the segregated districts have been found to be corruptors of the surrounding parts of the city, and to allure the unemployed young women to these sections.

Compulsory medical attendance is severely condemned. It is never thorough, and, yet, it gives an appearance of security that does not exist, and takes away one of the influences that tend to repress the evil, the fear of disease. This, then, is the final and weightiest objection to regulation; not that it fails as hygiene, not that it is contemptible as espionage, not that it is unnecessary as a police measure, but that it obstructs and confounds the proper attitude of society toward all social evils.

In the hands of good women lies the power for reform. Though no quantitative evidence of improving morality can be given, various movements supply proof that opinion is undergoing a change which must in the end effect conduct. The woman's movement will unquestionably destroy the passivity of women in respect to masculine irregularities. Mr. Flexner argues that if the social evil can be increased by artificial stimulation, it can likewise be lessened. Its complete stamping out cannot be hopefully prophesied even if summary and persistent action were taken, but that repression can be directed with such results against the exploiters of the traffic.

THE SURGERY OF THE HEART.

It is now known that the heart is not exempt from the field of the surgeon's skilled finger. A number of successful operations have been performed on the human heart for the closure of wounds. While this is true, such operative work will not come into general use. Many of these wounds are produced under conditions that render it unlikely that skilled attention could be secured in time to be of any value, and very few members of the medical profession will have the technical skill to cope with such an emergency.

It may be admitted that there is very little future for surgery as applied to diseases of the heart. All the morbid conditions that are found to occur in the interior of the heart, are completely hidden from the surgeon's reach. And the same may be said of pathological changes in the heart muscle.

It is nevertheless, interesting to note that Dr. Alexis Carrel has succeeded in clamping the great vessels of a dog's heart for two or three minutes while he performs an operation on the heart, and that the heart resumes its function.

DANGEROUS TRADES.

One of the most useful, as it is one of the most humanitarian, of all the directions in which legislators may cast their thoughts is that of devising ways and means of lessening the dangers of life and health of those employed in trades that have as their conduct a special hazard. It is a matter of much gratification that a great deal of progress has been made, but there is much yet to be accomplished.

Constantly one reads of deaths or serious injuries occurring in the process of making some particular article. The total loss of life and injury to health are very great. Workmen die of hardening of the arteries or of neuritis because they are employed in lead works. Others are killed or made blind by the careless way in which wood alcohol is left exposed.

There should, from time to time, be a thorough investigation of the dangers and what experience has discovered as the best methods of avoiding these; and then this should be embodied in up-to-date legislation. All evils cannot be cured by the enacting of laws; but most evils can, at all events, be controlled in this way. Of useful laws it may be said "They are the hangman's whip that keeps the loons in order." In the United States there are manufactured annually 10,000,000 gallons of wood alcohol, and some 3,000 persons are employed in these industries.

Proper ventilation will prevent danger by inhalation, suitable gloves will avoid poisoning by absorption, and careful education may do a good deal against the dangers of drinking this form of alcohol.

The New York Commission has gone into this subject with much care and thoroughness, and has issued the following recommendations:

To prohibit the presence of wood alcohol in any form of material intended for internal use.

To prohibit the presence of wood alcohol in preparations intended for external use on the human body.

To require ample ventilation in works in which wood alcohol is made or used in manufacturing products wherein wood alcohol remains as such; the same law should apply were the products containing wood alcohol are used up, as, for example, in varnishing vats in breweries.

To require containers in which wood alcohol is marketed to bear suitable display labels of warning.

These suggestions if embodied in the form of law would go a long way to obviate the dangers now too common. What may be done with regard to wood alcohol can also be done in the case of other dangerous trades, and the handling of dangerous chemicals.

BIRTH RATE.

A short time ago, W. C. V. Drysdale read a paper at the Royal Colonial Institute on the birth rate in various parts of the Empire. He said there was no call for alarm so far as England, Scotland and Wales were concerned. From 1901 to 1911 the increase in the population in Britain was 9.1 per cent., and this had only been exceeded twice in the past six decades.

In speaking of New Zealand and Australia, the lecturer went on to show that in these two islands the death rate was so low that the birth rate in excess of it gave the largest percentage increase of the population of any place in the world.

Turning to the conditions in Canada it was pointed out that the population had made a gain of 34 per cent. during the past ten years. This was almost phenomenal. But it had been so much influenced by immigration that it was not possible to state how much of the increase was brought about by the birth rate in excess of the death rate. Nevertheless there was ample proofs that, apart from immigration, Canada was making substantial gains by the natural increase in her own people.

The birth rate of Ontario was only 22 or 23 per thousand in the eighties, and actually dropped to 19 in 1895, since then it has recovered (owing to an increased marriage rate) to about 25 per thousand. Its

lowest birth rate was equal to that of France to-day. But the death rate has also fallen—namely, to 10 per thousand—so that the natural increase was nine per thousand, or not so much behind that of most civilized countries. This fact may be commended to the consideration of those who think that the slow rate of increase of the population in France is due to its low birth rate.

This remarkable phenomenon now appears. The increase of the birth rate in Ontario to 25 per thousand has been accompanied, not by a corresponding rise in the natural increase, but by an increase of the death rate to 14 per thousand. So the additional births appear to have populated the graveyard rather than the country. It has been suggested to me by Dr. Stevenson that the increase in the birth and death rates of Ontario may be exaggerated, in that due allowance has not been made by the Canadian authorities for the effect of immigration. But even making the fullest allowance for this, there can be no doubt that both the birth and death rates have risen, and by nearly the same amount.

In the paper of Dr. Drysdale there is ample food for the optimist. In Great Britain, the old centre of the Empire, there is a steady increase of the population due to the births exceeding the deaths. In the younger portions of the Empire this increase is very much greater. This paper will do a good deal to settle opinion for some time to come.

THE GOVERNMENT OF HOSPITALS.

It would be impossible to find in all the range of all the activities of man any set of institutions so variedly governed as are hospitals. Some are managed by the city council as municipal institutions. In some cases there is a composite board of members from the city council, the donors and the government. In some there is a body of trustees elected solely by the donors. In other cases there is a corporation with the right of perpetual succession composed of say five persons, and when one of these dies the remaining four elect another to take his place.

All these plans have given good results. The plan that in most instances has been the least successful is that where the medical staff has a voice in the management. The medical men should keep out of the business side of the work. They should hold themselves aloof from the tangles of making dismissals and additions to the staff. They may very properly act as an advisory body to the governing board, which would in the vast majority of instances be guided by the advice of the staff in matters medical and surgical.

The most remarkable type of management is that to be found in the Montreal General Hospital. From the *Canadian Medical Associa-*

tion Journal we learn that there are now about one thousand governors of the hospital, that it is necessary for one to canvass if he wishes an appointment on the staff. This unwieldy body should agree upon a moderate number who could act for all in such matters. Such an antiquated system cannot be ended too soon.

THE RETIREMENT OF DR. SHEPHERD.

Dr. F. J. Shepherd has retired from the active to the Consulting Staff of the Montreal General Hospital. Dr. Shepherd was senior surgeon to the hospital for 31 years. He graduated from McGill in 1871, and in 1872 joined the staff as demonstrator of anatomy. In 1883 became professor of anatomy, and in 1908 dean of the medical faculty.

Dr. Shepherd's name is a very familiar one with the medical profession of Canada. He has been a most successful teacher and surgeon, and has had many honors conferred upon him. We wish him a long life to enjoy his rest and leisure.

CHRISTIAN SCIENCE IN NEW YORK.

What is known as the McClellan-Thorn Bill has gone into effect in the state of New York. In the first draft of the bill the following appeared:

“Nothing in this act shall be held to restrict the practice of the Christian Scientists, so called, who are communicants in good and regular standing in any Christian Science church in this Commonwealth, or to registered pharmacists or registered dentists, or to clairvoyants, or to persons practising hypnotism, mind cure or massage, provided they do not violate any of the preceding provisions of this act.”

After some conferences between the representatives of the Christian Scientists and the State Board of Registration the following was agreed upon:

“Nothing in this act shall be held to apply to registered pharmacists, registered dentists, or registered optometrists, or to restrain the practice of clairvoyance, hypnotism or mind cure, or to apply to any person who ministers to or treats the sick or suffering by mental or spiritual means without the use of drugs or material remedy.”

The last section of the bill is an important one, and bears on the subject of medical practice in general. It is of a very wide scope. It is as follows:

“The word medicine, as used in this act, shall be regarded as referring to that branch of science which relates to the prevention, cure or alleviation of the diseases of the human body, and any person shall be

regarded as practising medicine within the meaning of section 8 of this chapter who shall publicly assume or advise any title or designation which shall show or tend to show that the person publicly assuming or advertising the same is a practitioner of medicine in one or more of its branches; or who shall investigate or diagnosticate physical ailments, defects or conditions of any person, with a view to treat or modify the same, by use of instruments or external appliances of manipulations, or by the application or administration of any remedial agent or substance for either internal or external effect, except in so far as the provisions of this section do not conflict with the provisions of exemption in section nine."

Leading Christian Scientists to the number of one thousand thronged the Legislative assembly rooms to press their claims. When the bill was passed the following statement was made by a number of prominent Scientists:

"The passage of the bill by the Legislature has enabled New York to take her rightful place among other progressive states in protecting by state law the medical as well as the religious rights of their citizens."

"For centuries, medical systems have been dosing the body with drugs and at the same time administering despair to the mind, expecting thereby to effect permanent cures. Body is not first and the mind secondary. Mrs. Eddy's great discovery, that it is the human mind that takes sick and the Divine mind that makes well is gradually receiving the recognition it deserves."

"The world moves, but not always forward!"

THE CANADIAN MEDICAL ACT.

When the various provinces that now form the Dominion became originally united in 1867, the control of educational matters was left with each province. Of this privilege each province was jealous, and for a long time each managed its own medical standard. For many years those who felt that a union of the Provinces in things medical would be a good thing kept up an agitation for a Dominion Medical Council.

When Confederation became an accomplished fact in 1867, the Canadian Medical Association was formed. This Association among other thing stood for a united Canadian profession. It appeared to some that the only way to secure a Dominion Medical Council was by having the British North American Act amended.

But as time went on another solution loomed above the horizon. It was thought that an act might be passed by the Parliament of Canada

that in turn would be accepted by the various provinces and in this way become the law for all. Dr. T. G. Roddick, of Montreal, took the matter up. He was a member in the Federal House from a Constituency in Montreal. He succeeded in placing on the Statute Book of Canada the first Canada Medical Act.

It was found, however, that there were features in the act that some of the provinces would not give their assent to. This led to some further years of waiting. But Dr. Roddick kept on in the good work, and at last a series of amendments were agreed upon by the medical associations of all the provinces, and these were adopted by the Parliament of Canada, under the name of Dr. Black from Hants, Nova Scotia.

Then came the final stage. The various provinces gradually passed the requisite acts accepting the Canada Medical Act, and enabling it to go into operation. In this way the Dominion act became the law of the provinces as well. Under this act a council is created. The Medical Council of each province elects two members, each University with a teaching medical faculty elects one, the homeopaths elect three, and the Governor-General-in-Council appoints three. These thirty-five members constitute the Medical Council under the Canada Medical Act.

This Council has the power to hold examinations on the professional subject, but not in matriculation or preliminary education, as this is left to the University where the person takes his medical course. The Dominion Medical Council has no right to conduct a college or give instructions. It is only a determiner of the medical standard of the country.

Those who come from other countries must furnish a certificate equivalent to those required of Canadian graduates. Those applying for registration under the Canada Medical Act must have their certificates approved of by the Council of their own Province. Thus the testing of the education which they have received is fixed by the local Councils.

Another very important provision of the Canada Medical Act is what is known as the ten year proviso. By this it is arranged that any one who was licensed in his province when the act came in force in 1812, could register after the lapse of ten years without undergoing an examination. Thus if he was licensed in Quebec in 1908 he can register in 1918 and thereafter. Those who were ten years in practice prior to 1912 can register at once if they desire to do so.

Thus the Canada Medical Act has gone into operation. Many have availed themselves of the ten year clause and have registered. Others have passed the examinations held under the Council and have secured a Dominion License in this way.

ORIGINAL CONTRIBUTIONS

TYPHOID FEVER INOCULATION*

BY SIR WILLIAM BOOG LEISHMAN, F.R.S.

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SOME years ago I was associated with Sir Almroth Wright who had introduced inoculation for typhoid fever at Netley. At the time a big epidemic of typhoid broke out in Baring Asylum and as Sir Almroth was just going off to India as a member of the Plague Commission and had to leave England in a few days his assistant, now Sir David Semple, took his place to carry on the inoculation. Sir David Semple was incubating Malta fever and he collapsed. Then Sir Almroth asked me to go down and carry on the work. This first introduction to the subject certainly was a very valuable lesson to me.

You must all be familiar with the strong arguments against inoculation in the shape of the negative phase. This phase explains itself very fully. Those who believe in this say that there is a moment following inoculation in which the resistance to infection is not only not increased, but actually lower. So that if during that moment a person came in contact with infection he would be more likely to contract the disease than an uninoculated person. If ever one should encounter that phase anywhere it would have been in this asylum. Here vaccine was employed in large doses and the result was that in the inoculation of nearly one hundred attendants in the Asylum, among others going down every day with the disease and a good many dying, not a single inoculated person contracted enteric. This made on me a strong impression, confirmed since, that there is no practical danger of the negative phase with typhoid inoculation with dead typhoid cultures. That argument against inoculation is brought forward even now. Many colleagues in England inoculate when there is no typhoid about, but never dream of inoculating in the presence of an epidemic. Many are still of this opinion, and this has been the hardest argument to fight down. Of course if this had really been the case it would have limited the use of typhoid vaccination largely in India, as enteric is found in every state of the country; and we would not have dared to inoculate there if this statement had been true. We believe that there is no such thing as the negative phase. We advised inoculation in India with the results I will show you.

*An address delivered before the Toronto Academy of Medicine, 2nd March, 1914.

On Sir Almroth retiring his mantle fell on my shoulders. We had a large opportunity of testing typhoid vaccination in the Boer War, where we tried to get good statistical information. In war it is very difficult to get that information from the fact that in active service statistical information is impossible to get. Documents get lost, the men responsible for them die and your figures are in chaos and such figures as do come to light are contradictory. Some of the figures we got were good, some were not very good and some were actually bad. That being so the Army Council decided that typhoid inoculation must be discontinued in the army until we knew more about it.

For the purpose of learning more about it, there was appointed a commission of experts, so called, for I happened to be one of them. Their function was to get information in regard to all that was known of the subject and to conduct further research with a view to the improvement of the vaccine. This committee is now dissolved, having presented their final report. Their report recommended the universal adoption of typhoid vaccination in the army. This was gratifying to me because it was an extraordinary up-hill fight, as vaccination had fallen into bad repute. The war officials, however, had not made it compulsory. I hope the day will come when our army following the example of the American army will make it compulsory for a soldier to be inoculated either in peace or war. It is a many sided question.

The nature of the vaccine we employ is a sterilized broth culture of the typhoid bacillus, sterilized, that is, killed, and we employ, as a sterilizing agent, heat. You must not parboil the bacteria as we used to do in the olden days of the Boer War, that is, you must not over heat it. We have learned that this overheating destroys the effectiveness of the vaccine as an immunizing agent. We employ the lowest temperature at which we are certain of killing the bacteria in one hour and that is 53 degrees centigrade. The organism we have selected for that purpose is the strain alluded to by Dr. Hamilton. We selected this haphazard at first. I remember the post-mortem at Netley from which I isolated that bacillus. It was from the spleen of an undistinguished soldier called Rollins who died there many years ago. I was on sufficiently intimate terms with a clergyman as to suggest to him a subject for a text of his sermon, and thought he could have no better one than the case of that soldier Rollins. He died of a preventable fever, but his death has been the means of saving hundreds and perhaps thousands of lives. This strain from Rollins, though selected haphazard, happened to be a good one. Strains differ in their property of giving rise to antibodies. This one is excellent for that purpose. It is more suitable than a great many others we have tested against it. We always add

a certain amount of antiseptic to our vaccine and again I should like to emphasize the necessity for this in regard to typhoid or any vaccine, for the purpose of insuring subsequent sterility. One would be a criminal if one did not send out sterilized vaccine but you cannot make it remain sterilized in other hands unless antiseptics are added. There are only too many instances where this has been neglected. A plague vaccine in India became infected with tetanus germs with terrible results.

Scarcely less important is the question of standardization. We standardize our vaccine by counting the bacteria. With our present knowledge that is the most effective way in which we can proceed. An ideal method of standardization is not yet discovered. We carry out our method the best we can in regard to technique. We always use the same strain and count the germs so that we shall get the same results with regard to reaction and with regard to protection in the successive batches of vaccine prepared to use. Beyond that, however, one cannot go, for though we standardize the vaccine we cannot standardize the person we are going to vaccinate. Different individuals differ very much in individual susceptibility. We cannot, I think, advise especially further precautions, such as analyzing the blood of the individual to see if he is especially susceptible to virus or not. From my own experience I am led to the conclusion that when an individual shows exceptionally severe reaction to vaccine, that individual is not likely to be effectively protected as one who shows ordinary reaction. Indeed, he is more likely, if exposed, to contract the disease. I have seen cases in which this has been well shown, as in the case of a British officer who had a very severe reaction and subsequently within a year or eighteen months had a very severe attack of typhoid in Africa. He nearly died and two years afterwards he had another attack of enteric. He was very susceptible to the typhoid bacilli whether they were dead or alive.

We employ in our dosage two successive inoculations, first a dose of five hundred million bacteria; second, double that or one thousand million. We separate these doses by an interval of ten days. This interval is not fixed hapazard but is the result of careful experiment which has shown this to be the most suitable length of time between two doses. A third dose would be better, possibly four would be better than three, but in the army there are reasons which make it impossible to go beyond two doses. In the American army where they have had the good sense to adopt the compulsory system they tell their men they have to have three doses.

Following the question of dose is the question of reaction. The vaccine is given by a hypodermic injection, and results in an area of

tenderness and redness about three inches in diameter about the site of introduction to the needle. This is sometimes painful and generally tender on pressure. This local reaction reaches its maximum in eighteen to twenty-four hours after inoculation and then subsides. There is nothing like the disturbance which follows an ordinary vaccination against smallpox. In exceptional cases the glands of the axilla become slightly enlarged and the lymphatics injected, but this generally subsides rapidly. The symptoms of the constitutional reaction are fever, and sometimes a certain amount of nausea and general feeling of malaise. The fever rarely exceeds 101 degrees, the average is a fraction over a hundred and a large percentage of inoculated individuals show no temperature at all. There are, however, cases which show a much more severe reaction than that and where the temperature may rise to 102 or over and the individual feel out of sorts for perhaps three or four days. In several hundred thousand inoculations which have been done with our vaccine I am glad to say no dangerous results have been reported and no deaths. It is a perfectly safe procedure even if reaction is sometimes severe.

In connection with this question of reaction there are a great many other typhoid vaccines than the one devised by Sir Almroth Wright and improved by myself and my colleagues. This is only one, but it is the pioneer, the one which in early days was employed most largely and is the parent of the one now used by our colleagues of the Army Medical Service of the United States. Many other vaccines are in use, but very few of them have been used on so large a scale.

To decide whether a vaccine is good or bad the only clinical test is whether it will protect from typhoid fever. Arguments in favor of these vaccines are mostly confined to laboratory experiment and though convinced from that point of view I will not give up our own until I see another vaccine giving better statistical results. The living vaccine of Bedfordha is perhaps the best. I just mention this particular one because it is much advocated by those who bear the greatest name in bacteriology. There is a grave disadvantage to its use, even if it is one which gives a higher degree of immunity than our dead vaccine and that is because it is a living vaccine. A living typhoid bacteria, under the skin even if attenuated and even if we know that such a procedure is perfectly safe and will not produce an attack of typhoid fever from the point of view of widespread use, is not advisable. We can never safely proceed to issue a living vaccine widecast over the country. It may get into water, etc., and do harm, we therefore adhere to the dead vaccine instead of the living one, even if the latter should be slightly better in results.

In regard to the duration of immunity conveyed by our vaccine, we have not as precise information as we would like. It is difficult with a large floating population as an army where men are going to the rear and batches are coming to take their places, to follow the histories accurately. From the knowledge we have our vaccine conveys immunity for about two years. After two years or better eighteen months we should revaccinate. Our soldiers in India are inoculated after that lapse of time. Here I would like to state my personal view. The usual criterion which is adopted of testing blood for the presence of immune substances is not necessarily accurate. I have good reason to know that the individual may lose all trace of demonstrable bactericidal substances and agglutinins within six months after inoculation and may still be protected against infection. Our tests for these substances are at best somewhat crude. At present, even if these substances are not found we test the individual some eight months after inoculation we are not entitled to say he is not protected.

What have vaccines done? It may be of interest to you to learn our results in the case of our army in India. In the case of inoculation in the army, we have to deal with it from two points of view, protection in peace and protection in war; these are very different problems. In peace in the foreign service of the army, typhoid fever has been the most serious trouble against which we have to fight. As an example of this, the incidence of enteric of our army in India, where there are 73,000 troops on an average from the year 1890 and up to the year 1905, was an average of from 1,500 to 1,600 cases of enteric every year in this garrison, and as regards deaths you are fortunate if you can keep the typhoid rate under 25 per cent. 400, 383, 443, 536, 637, 348, etc., are yearly number of deaths. That means we are losing in these years practically half a battalion by death from enteric in India every year.

I hardly need quote to you the results of typhoid fever in war. One need only turn to our Boer War, where our of 380,603 troops we had 57,684 cases and 8,022 deaths from enteric fever in three years. That incidence is appalling, especially if one contrasts the 8,022 deaths with the total number of deaths from those either killed in action or who have died in other ways. Here the total number of deaths from other causes than typhoid was 7,702, a less number than that for typhoid alone. The Spanish War of 1898, a recent campaign between two civilized powers shows precisely similar results. The same thing will happen if any two powers will engage in a war, they will take typhoid fever with them, either in incubation cases or still more deadly in typhoid carriers or will contract the disease in the country they invade. Given a few sources of foci of infection and it will under the conditions of

field service spread like wildfire. It has always done so and will always do so unless we take precautions against it. In these recent campaigns every advantage we could think of for improved sanitary appliances, everything we could think of in peace was brought into service. Good water was provided and we sterilized the excreta and yet we had this lamentable result.

What has typhoid inoculation done to better this condition? With a view to getting the results exhibited stistically, we tried what was called the test unit of experiment, that means that we selected, with the approval of the War Office, as soon as we could such a vaccine as could do no harm and one we believed would do good. We took the responsibility of recommending it. They accepted this and allowed us to appoint a medical officer to every unit that left England for foreign service. This officer had a special course of training at the Army Medical College in modern methods of diagnosing fevers, methods of blood analysis, etc. These officers after this course were attached to these units. They had to take on them the part of lecturing to the men and to convince the soldiers that they should accept this offer of protection. Their chief task when accompanying these units abroad was that they should keep accurate record of the soldiers inoculated and see that every case of continued fever in each battalion was investigated by blood culture or other means with a view to deciding if it were enteric fever, or if not find out what fever it really was.

During a period of experiment lasting five years, twenty-four such units were dealt with and the report of twenty-six medical officers collected into tables, and summarized as follows:—For these twenty-four regiments the average period of exposure to infection was dated from the time of their arrival in tropical stations till the time we ceased to keep records; the average period was one year and eight months. The number of men who were in the experiment concerned was 19,514. Of the men who were vaccinated among this 19,514, the number was 10,378, and among these 10,378 in this average period of one year and eight months were fifty-six cases of enteric fever, five of whom died.

Contrast that with the uninoculated group. The smaller group, 8,936 practically 9,000 against the 10,000. In this smaller number there were 272 cases and forty-six deaths. That is, nearly as many cases died of enteric in the non-inoculated group as contracted infection in the inoculated. Figures are not true indicators of what typhoid inoculation can do, for we figure among these, every case that was inoculated, whether properly inoculated or not. A very considerable proportion of these cases were inoculated with ineffective vaccine, superheated vaccine. In other cases soldiers who contracted enteric had

been inoculated with vaccine kept too long and with which must have lost all potency. These are all lumped together there, and if I excluded these and those soldiers who got one dose instead of two doses, if I put these all outside, the table would have worked out ten to one instead of five to one in favor of inoculation, as it has worked out in our experiment. It is, however, the best experiment on record although better figures are shown in the American army and in the French army. In this experiment the external conditions were more accurately kept than in any other similar experiment. In each of these units soldiers were living under the same conditions as regards food and water and as regards exposure to infection. The two groups of inoculated and non-inoculated were strictly comparable. We found it a better test than in the case of groups of men altogether inoculated. I know this from our French colleagues and they quite agree that these figures are the best evidence we have in support of inoculation. We have had very much better figures than those in individual units exposed to infection within comparatively short time of inoculation, that is within six or eight months afterwards. There the results are more instructing. One is not exaggerating to say that those results are comparable to the results given by smallpox vaccination. Immunity tends to die away and as the time approaches two years the individual should be re-inoculated.

The effect of this system in India, only recently extended to the whole garrison, shows from the year 1907 a continual growth in the yearly number of those inoculated. This growth has been most gratifying and now has reached close on ninety-five per cent. of our whole garrison in India and that when on a voluntary basis, says a great deal for the British soldier.

Leading down from the year 1907 we find that in 1907 there were 1910 cases and a large number of deaths. In 1908 there were 998 cases and 191 deaths. In 1909 there were 616 cases with 112 deaths. In 1910, 196 cases and 45 deaths. In 1911, 170 cases and 22 deaths, and in 1912, 118 cases in the whole of India as contrasted with the figures of some 2,000 of a few years before. Now that ninety-five per cent. of the soldiers are inoculated, it is much more difficult to draw comparisons between results for those inoculated and those not inoculated because of the great disparity between the two groups. The incidence is now confined really to small groups of non-inoculated cases.

I do not wish to minimize the value resulting from increased study and increased application of the study of hygiene and sanitation. I may remind you that in India now when a soldier contracts enteric he is not allowed to return to the barracks until he has been thoroughly tested bacteriologically. He is sent for convalescence at once to the typhoid

convalescent depot of which there are two in India. There he is tested from day to day till we are certain he is not a typhoid carrier. No carrier who develops as carrier during service in India can be missed by this system and that is an enormous gain, guarding against the spreading of infection. Now the carrier group is ordinarily not over three per cent. and last year only two or three carriers were found in the whole of India.

There are two more general questions I should like to touch on, first the use of typhoid vaccine and the treatment of cases of enteric, second the application of typhoid vaccine to the civil population as a protective measure. The treatment of typhoid fever by inoculation is beyond the stage of mere projection and interesting experiment. Treatment of cases of enteric by typhoid vaccine is thoroughly scientific and is the only scientific method to treat these cases.

This is not a new thing and I do not claim any credit for it, but I have strongly advocated its use among my brother officers. Given a proper vaccine and given proper doses of vaccine you will approach a case of typhoid fever with very much more confidence than you have in the past. I have seen grave toxic cases treated in this way change their character completely in a period of twenty-four to forty-eight hours, not in the way of temperature coming down straight to normal, and the attack of fever becoming aborted, but the temperature running along at a much more moderate level and above all in a change for better condition of the patient, who loses the typical typhoid facies, the anxious expression we all know so well. He becomes a cheerful individual, he no longer looks like a man dangerously ill. I have known soldiers to ask for the inoculation to be repeated. This is a good testimony of its value in treatment. The temperature following inoculation usually rises in twelve hours to a slightly higher level than one would expect to be present in an uninterrupted case. The local reaction is very slightly in evidence. Following this rise within twelve hours or so the temperature drops to a lower level than one would expect in an ordinary case. The temperature at first goes a little higher then goes down lower than you expected, and only by degrees comes up to the old level. Another inoculation brings it down a little lower and when two or three doses have been administered it comes down to normal and remains normal.

The duration of the attack is not greatly shortened but there are fewer complications and relapses are much more rare. Monsieur Natell's published account of his collections of the writings of those who have been working on this subject, some forty papers published in different countries shows what this method of treatment is doing. These cases of Natell's, thirteen hundred and ten in all, had a morality of only

five per cent. and here there were cases treated by doses of vaccine that were useless; some were too small and others one could have no confidence in. I am convinced that with an effective vaccine the mortality would be one or two per cent. If you have opportunity of trying this treatment, try it and you will be rewarded. One should start with an initial dose of two hundred million of the ordinary prophylactic vaccine and repeat the dose on the third day allowing one clear day as an interval. Repeat again on the fifth day using on the third occasion say five hundred million. I do not think that a smaller dose than that will have any effect at all. There is still much information required on this subject and we must have far larger figures to make this information accurate. The treatment is harmless and is scientific, the most promising treatment in typhoid we possess.

As to the application of typhoid vaccine in civil life, it seems to me that if we control typhoid in the army in peace and we hope to do so in the future in war, that you in civil life should not hold your hands from the benefit of such typhoid vaccination, especially if you are threatened or exposed to typhoid in your immediate surroundings.

Measures of protection against typhoid such as improved water supply, an improved sanitation generally, instruction of the people as to the care necessary to prevent this disease is an excellent aid but does not take the place of typhoid inoculation. This vaccine is a very simple thing to prepare. I have had brought to my notice in several ways during my few days spent in Canada that you suffer largely from typhoid in this country. For example Ottawa has had a severe epidemic and typhoid is at large in various parts of your country districts. If you could organize a campaign against typhoid to persuade people likely to be exposed to infection to be inoculated, you would be doing a great good to this country and to science in general and in that way accumulate information that would convince everyone.

I was bold enough at Montreal the other day to suggest that the authorities should vaccinate the whole population. That seemed a tall order, but I do not see why it should not be done.

We do not know when we may catch typhoid ourselves, why throw away the chance of preventing such a happening? Thinking over the thing from that point of view you will have three sets of people to convince. First and most important yourself and it is up to you to convince the second set the authorities, and thirdly, the people you are going to inoculate. The authorities are the hardest nuts to crack. You may have trouble with them but not with the people. The latter are extraordinarily amenable to the influence of the medical man whom they trust. If you are convinced and believe typhoid inoculation is a good

thing, it will do no harm if you inoculate yourself except to cause a sore spot or sore head for a day or so. If you inoculate yourself very few people will refuse inoculation when it comes to their turn. Of course there is a prejudice against this form of treatment like there is against vascination for smallpox, but these prejudices vanish in the presence of danger. When the relatives and children are contracting enteric their friends will fly to you and you will have no difficulty to get them to accept treatment.

I believe personally most strongly in the benefit to be derived from this method of treatment and if I may give you advice should urge you to use it to the utmost in adding to the weapons which you use fighting this disease.

A vote of thanks was proposed by Sir John Gibson, Lieutenant Governor, and seconded by Dr. J. T. Fotheringham and very cordially tendered to the distinguished lecturer.

DIPHTHERITIC TONSILLITIS.

Swift Current, Sask.

BY H. C. BURROUGHS, M. D.,

AVE heard the term scoffed at on more than one occasion and it is largely for that reason that I wish to discuss the subject to some extent.

The condition of Diphtheria is a knotty problem for the beginner if he call all the cases diphtheria, where the germ has been found in the throat. Something of this nature may occur. He may diagnose a case as follicular tonsillitis. The case may progress somewhat slowly, a second physician is called, a culture may be taken, sent to the laboratory and the Klebs Loeffler found. The case is given antitoxin, quarantined and perhaps is well the next morning. The house is kept under quarantine four weeks and longer if a negative culture is not found. Yet all this time the first diagnosis was right. The condition was a follicular tonsillitis caused partially by an avirulent type of diphtheria germ mixed with striptococci and other organisms commonly found in the throat and upon the tonsils.

About a year ago the practice was made of taking smears and culturses from all cases of sore throat which presented spots upon the tonsils. It was found in about nine cases out of ten that the diphtheria germ was present, and it seemed an accurate easy method of diagnosis. Two specimens were taken from a number of cases, one of which was

examined in my office, and the other at the provincial laboratory. Our results were always found to correspond. It was found that buying antitoxin was expensive and its administration unpleasant. People did not seem to believe they had diphtheria when the child got well in twenty-four hours or so. I stopped actions on the evidence obtained from smears and cultures, but kept on taking cultures and examining them in order to clear up matters. A local doctor also obtained a number of cultures and these were found to work out as mine did. One can make an accurate enough diagnosis with the naked eye and may solely rely on this method. Have had very few cases of true diphtheria but find it very easy to diagnose them. Antitoxin is not always such a life-saver in these cases as it is supposed to be. No doubt if given early it is the best treatment, but if given late the results are not always the most brilliant.

Have come to the following conclusions:—

- 1st. That true diphtheria is not a very common condition.
- 2nd. That one should be able to diagnose diphtheria with the naked eye in nearly all cases.
- 3rd. That no case should be quarantined which cannot be diagnosed beyond a doubt with the naked eye.
- 4th. That diphtheria tonsillitis is a very prevalent condition or more accurately perhaps, that it is a common thing to find the diphtheria germ in the throat of patients suffering from tonsillitis.

GLYCOSURIA.*

BY W. HALE WHITE, M.D. LOND., F.R.C.P., LOND.

Senior Physician to Guy's Hospital.

MR. PRESIDENT AND GENTLEMEN,—In this country Fehling's test for glycosuria is the one most used, but the Rochelle salt and copper solutions should be mixed just before use; if kept mixed for weeks a brick-red precipitate often appears on boiling when no sugar is present. I have known forgetfulness of this lead to disastrous results. It is common to see medical reports of life insurance cases which state that the proposer has a trace of sugar in his urine, but is otherwise perfectly healthy. I hope we shall hear how many of such cases become diabetic. No doubt in several the reducing agent is not dextrose. It is often glycuronic acid, which has nothing to do with glycosuria, often

*Delivered at a meeting of the Leeds and West Riding Medico-Chirurgical Society on January 30th, 1914.

uric acid or urates; it may be other sugars—e.g., maltose or arabinose, a pentose, the excretion of which indicates no serious disease; nevertheless, those passing it have been thought to have diabetes and have consequently been subjected to irksome and unnecessary dietetic treatment, and a suckling woman passing lactose in her urine has been said to have diabetes. Perhaps in some very few cases small quantities of dextrose may be detected because the proposer has taken sugar in excess of what is for him the normal limit of tolerance, which is that most healthy people can take about 150 grammes on an empty stomach without causing glycosuria. We want information as to whether there may not be persons whose dextrose tolerance is lower than that usually stated to be normal. I suspect there are. At any rate, we know that minute amounts of dextrose are on ordinary diet contained in the blood and excreted in the urine, although the one gramme a day excreted in healthy urine is not enough to reduce Fehling's solution. But pregnancy can hardly be considered abnormal, yet it may be accompanied, not only by the excretion of lactose, but by the passage in the urine of dextrose detectable by Fehling's solution even when the woman is on ordinary diet. We know that the thyroid hypertrophies in pregnancy and that glycosuria occasionally appears in exophthalmic goitre. Perhaps the glycosuria of pregnancy is due to this hypertrophy of the thyroid. Perhaps, too, the hypertrophy of the pituitary, which also takes place in pregnancy, is one cause of the glycosuria; however, we must remember that it is chiefly the anterior lobe of the pituitary which enlarges, but it is extract of the posterior lobe injection of which causes glycosuria; still considering the propinquity of the two lobes it is quite possible that enlargement of the anterior lobe stimulates the epithelial cells—called *pars intermedia*—which form the covering of the posterior lobe, and the colloid secretion of which lowers the tolerance for sugar.

It is often stated that in man glycosuria means hyperglycæmia. Certainly this is almost always true, but there are a few persons who excrete 1-5 grammes of sugar a day who have not hyperglycæmia nor any symptom of diabetes. They may be suspected when it is observed that restricting the carbohydrate intake does not do away with the glycosuria. It has been suggested that this variety of glycosuria is allied to that caused by phloridzin, there being some body in the blood which increases the permeability of the renal cells to dextrose. This mild glycosuria appears to be of no clinical significance. Perhaps some life insurance examples of a trace of sugar are instances in point.

Each apparently healthy person whose urine gives a slight or suspicious reduction with the copper test should be (1) questioned as to the amount of sugar recently taken; (2) questioned as to any drugs

taken; (3) examined to see if any disease or condition known to lower sugar tolerance is present—e.g., pregnancy or exophthalmic goitre; (4) it should be observed whether taking less carbohydrate controls the glycosuria; and (5) he should have the same specimen of urine examined for the fermentation and phenylhydrazine tests, for by these all reducing bodies except dextrose and lævulose can be excluded, and the separation of these two is not necessary for the diagnosis of diabetes, in which both may be passed. It must be the same specimen because probably in the early stages of diabetes sugar is not constantly present in the urine. Much hardship is often done to these proposers by the more unconfirmed statement, "A trace of sugar," for as long as that statement is uncorrected the head office cannot accept the proposal at ordinary rates. When the proposer has once passed sugar and the examiner finds the urine free from it he must ascertain what diet the proposer is taking.

SOME DISEASES WHICH MAY BE ACCOMPANIED BY GLYCOSURIA.

We will now briefly consider some diseases which may be accompanied by glycosuria.

1. *Exophthalmic Goitre*. Firstly, there is exophthalmic goitre. The frequency of glycosuria cannot be stated, for unless the urine of many cases were examined daily slight examples would be missed. The glycosuria may pass away as the exophthalmic goitre gets better. For example, a girl, aged 21, had exophthalmos, tachycardia, large thyroid, tremor, and diarrhœa. Six months later glycosuria appeared; soon after this she began to improve, the glycosuria persisted two years, but by the time it left her she was so well that she could walk eight miles. Seen twelve years later, she said she had been perfectly healthy all this time; there was no glycosuria. On the other hand, I know of three cases of exophthalmic goitre that have died from diabetes. 1. A man, aged 40, had exophthalmic goitre for years, but glycosuria was only noticed twelve months before I saw him; during all this time it persisted, although the exophthalmic goitre improved, so that now hardly any evidence of it could be found; he died from diabetic coma a few days after I saw him. 2. A woman, aged 31, had a large thyroid, great tremor and tachycardia, and some exophthalmos; she improved greatly under rest; eyes and thyroid became almost normal. Eight years after I first saw her she was found to have diabetes, from which she died in two months. 3. A woman, aged 41, known to have had diabetes and slight exophthalmic goitre for eight years, was admitted into the hospital and died soon after in diabetic coma. We learn from these cases that sufferers from exophthalmic goitre may die of diabetic coma, and the strange fact that the glycosuria may appear, continue and even end

in diabetic coma although the exophthalmic goitre is improving and the thyroid has become of almost normal size. Medicinal administration of thyroid may cause glycosuria, and I see no reason why it should not lead to diabetes, although I know no case in point. Anyhow, it is desirable when sufferers from myxœdema are taking thyroid regularly to test the urine from time to time and to limit the doses of thyroid so that glycosuria does not appear. As might be expected, sufferers from myxœdema have a high sugar tolerance, but a few cases have been recorded of glycosuria associated with myxœdema, but in some at least there is doubt as to the correctness of the diagnosis. There is no evidence as to how the thyroid lowers the tolerance for sugar so as to lead to glycosuria; it has been suggested that it acts through the pancreas.

Diseases of the Pituitary Body.—Secondly, we have pituitary glycosuria. As described above, the colloid secretion of the pituitary which passes into the general circulation, in some animals at least, going first straight into the cerebro-spinal fluid, excites glycosuria by lowering sugar tolerance; hence, when, as in acromegaly, we have enlargement of the anterior lobe of the pituitary body, this by its pressure on the colloid secreting cells excites them and so leads to an overproduction of their secretion with a low glucose tolerance, consequent glycosuria, and in a severe case diabetes; but acromegaly being rare, this variety of glycosuria is not of the same clinical importance as that of exophthalmic goitre. It is of interest that the pars intermedia of the pituitary and the thyroid have the same structure; both secrete colloid material, and an over-secretion of either lowers sugar tolerance and causes glycosuria; on the other hand, the destruction of either, as in myxœdema and hypopituitarism, causes an increased sugar tolerance. If pituitary extract were employed therapeutically for long periods we should expect to meet with glycosuria as a result. In some animals it has followed the injection of pituitary extract.

3. *Diseases of the Adrenals.*—Thirdly, it is well known that adrenalin, which is constantly being poured into the blood from the adrenal medulla, tends to lower glucose tolerance, and the same is probably true of the secretion from all the chromaffin tissues of the body. As far as I know there is no certain instance in clinical medicine of glycosuria due to increased secretion of adrenalin; but it is given with great success in asthma, and it behooves us occasionally to test the urine of those taking it, for it may possibly lead to glycosuria. Some think that as age advances all the chromaffin tissues become more active, and by this explain the high-tension pulse often seen in persons well past middle life. Garrod suggests that some examples of the mild glycosuria of elderly people are due to the same cause.

4. *Diseases of the Organs of Generation.*—Fourthly, glycosuria has been observed in disease of the female organs of generation—e.g., ovarian tumors—and it has disappeared when the surgeon has removed the tumor. Probably here we have the effect of an internal secretion.

5. *Diseases of the Pancreas and Parathyroids.*—Fifthly, whilst in the instances just mentioned we have to do with internal secretions which provoke glycosuria; that of the pancreas restrains it, hence when this is almost or completely destroyed glycosuria and diabetes appear. I find that in 14 consecutive years at Guy's Hospital there were 6,708 post-mortem examinations, and that the pancreas was to the naked eye diseased in 142 of these, or in about 2 per cent. of all persons dying in a large general hospital. It was called atrophic or small in 19 cases; 16 of these had diabetes, and a quarter of all the patients dying from diabetes in Guy's Hospital have a small atrophic pancreas. Other pancreatic diseases will cause it, but they must destroy most of the gland. On the other hand, patients may die from diabetes and yet the pancreas may appear perfectly healthy even after histological examination; perhaps these cases are dependent upon disease of other organs influencing sugar tolerance. It is very difficult to diagnose chronic pancreatitis in any case of diabetes, but there is an impression, probably correct, that it is more likely to be found if the diabetes is severe. Lately it has been suggested that cholangitis, usually the variety associated with gall-stones, may cause glycosuria because the cholangitis by spread or inflammation leads to chronic pancreatitis, and cases have been recorded in which glycosuria has disappeared after the gall-bladder has been drained. But the figures taken from the post-mortem room at Guy's Hospital do not afford much evidence of a causative relation between gall-stones and diabetes. I find that in the post-mortem room among 15,000 consecutive post-mortem examinations gall-stones were found in 476, or once in every 32 deaths; 121 of the 15,000 died from diabetes, so that on the theory of chance four of these should have had gall-stones, while as a matter of fact 11 had, but the difference between 4 and 11 is not enough to be very convincing—that between 40 and 110 would have been much more so—especially as many of the diabetics died before the age at which gall-stones are likely, for Pavy found that among hospital patients the usual age of death from diabetes was between 15 and 40, but the age of nearly all the sufferers from gall-stones exceeds 40. Further, that gall-stones have much influence in the production of diabetes is unlikely, for they are much commoner in women than in men, but diabetes is three times as common in men as among women. It has been suggested that the chronic pancreatitis associated with diabetes may be due to inflammation of the duodenum spreading up the pancreatic duct and sometimes to arterio-sclerosis, but I have already

mentioned the suggestion that an excess of adrenalin causes both glycosuria and high blood pressure. The parathyroids have, on experimental evidence, been shown to have the same relationship to glycosuria as the pancreas, for excision of them in dogs causes it, but as far as we can tell this fact has no application in medicine.

6. *Diseases of the Nervous System.*—Sixthly, it has been known for a long while that various disorders of the nervous system will cause glycosuria; indeed, rather over 30 years ago it was urged by some that diabetes was a disease of the nervous system. Instances in which it has followed shock and mental emotion are on record, and it has been shown by Cannon and others that glycosuria appears in cats if they are frightened by a dog. Glycosuria has been found in association with meningitis, cerebral tumors, and other organic nervous diseases. It may, if carefully sought, often be found after severe concussion. But most of these nervous varieties of glycosuria are clinically unimportant, for either the nervous lesion soon kills or the glycosuria is slight and transient. We know nothing for certain as to its mode of production in man, but, because the secretion of adrenalin is under the control of the splanchnics, it has naturally been suggested that nervous glycosuria is really adrenalin glycosuria, and for this there is strong experimental evidence; or that, as the cervical sympathetic sends fibres to the pituitary and excision of the superior cervical ganglion leads to glycosuria, all nervous glycosuria is really pituitary glycosuria; or it has been thought to be due to influences reaching to a rapid transformation of glycogen into sugar.

7. *Diseases of the Liver.*—Seventhly, considering the importance of the liver as a storehouse for glycogen, it is strange at first that diabetes is a rare complication of organic hepatic disease, so rare that it is open to question whether there is an association of any importance. Perhaps this is because for hepatic disorder to cause diabetes we should require an exaggeration of hepatic function seen in exophthalmic goitre, and then, too, there are, besides the liver, other stores for glycogen which must quickly compensate for any deficiency of its glycogenic function, for in many hepatic disorders the hepatic glycogen is almost absent—e.g., after obstruction to the hepatic duct Bernard's puncture will not lead to glycosuria. It is true that glycosuria has been occasionally recorded in cirrhosis, acute yellow atrophy, phosphorus poisoning, and other hepatic disorders, but whether in such cases it is disorder of the function of the liver which leads to the glycosuria is not proved. Although if the liver is diseased giving dextrose rarely leads to glycosuria, giving lævulose often does, a fact which some authors say may help in the diagnosis of hepatic disorders, but others deny this. It is only fair to state that some, especially the French school, consider that many

examples of glycosuria, especially those of the mild variety seen in middle-aged or elderly people who are obese and over-eat, are due to a disordered hepatic function in virtue of which sugar that should be retained as glycogen is poured into the blood, and they urge that the liver is probably the cause of the hyperglycæmia, for it is often enlarged. That it is enlarged is certainly true, for these persons often have a fatty liver, but whether this should be regarded as the cause of the glycosuria is doubtful. On proper dieting the liver becomes smaller and the sugar disappears from the urine. It has been suggested that some forms of glycosuria may be of intestinal origin, but we have no clinical evidence of this.

I have briefly reviewed the causes of glycosuria and we have seen that (1) the pancreas, and probably to a far less extent the parathyroids, by their internal secretion tend to the lessening of sugar in the urine; and (2) the thyroid, pituitary, suprarenal bodies, and possibly some of the organs of generation, by their internal secretion, to its increase. Whether all these organs maintain the normal balance by acting on each other, or by acting directly on the liver or on other parts of the body which produce sugar, is not known. Some at least of the processes causing glycosuria are under the control of the nervous system. In most cases of glycosuria it is impossible to say that any of these internal secreting organs or the nervous system or the liver are structurally diseased, and there may be causes of glycosuria of which at present we are unaware.

CAUSATION OF HYPERGLYCAEMIA.

Hyperglycæmia must be due to either (1) a diminished destruction of the tissues of the sugar in the blood, or (2) an increased pouring of sugar into the blood. Experiments on animals, although often difficult to interpret, are considered by many to show that when a dog has hyperglycæmia as a result of excision of the pancreas this is due to a failure of the tissues to utilize sugar owing to the absence of a pancreatic hormone which acts as an amboceptor. Others believe that hyperglycæmia is not due to a failure of the tissues to utilize sugar but to an overproduction, and it is probable that this is the cause of hyperglycæmia in most cases of human glycosuria. The ease with which in man mild examples can be controlled by diminishing the carbohydrate intake, the fact that we know that in severe cases some of the sugar in the urine comes from the protein tissues, and the fact that although the muscles are the chief users of sugar, yet diseases such as progressive muscular atrophy, muscular dystrophy, anorexia nervosa, and cancer, in which the muscular wasting is so extreme that it is difficult to imagine that the muscles are not failing to use their usual food, are not accompanied by glycosuria, all point to this conclusion. In mild cases

the sugar in the blood is due to a lowered sugar tolerance—in other words, the hyperglycæmia is due to what is for that person an excess in the food. But, as is well known, in a severe case of diabetes the sugar excreted in the urine is far in excess of that taken in the food, and we believe that in such an instance the sugar is derived from the imperfect metabolism of proteins and to much less extent of fats. Most clinical observers are of opinion that the so-called alimentary glycosuria—i.e., mere lowering of the sugar tolerance—is an early stage of diabetes in which, if the patient lives long enough, later sugar will be formed from proteins and fats, or, in other words, a simple excess of sugar in the blood appears to have a very deleterious effect in so upsetting the metabolism of proteins and fats as ultimately to lead to a still greater hyperglycæmia and kill the patient. It is universally agreed that, within limits, it is wise, by dieting, to decrease the glycosuria in even severe diabetes, which again seems to indicate that in some way the mere presence of sugar in the blood is harmful. This is equally difficult to understand whether or not we believe hyperglycæmia to be due to an impaired utilization of dextrose by the tissues, and even if this view be true it is clear that in a severe case other causes—e.g., protein metabolism—are producing an excess of sugar in the blood, and we have this extraordinary state of affairs, more sugar in the blood because the tissues cannot use it, followed by still more from proteins and fats. We should have expected that if the body was deficient in energy because the sugar in the blood was not burnt up, that was the very reason why other metabolic processes should be carried out as completely as possible. Another strange thing is that in the young the progress of diabetes towards death is rapid as compared with the progress in those over 60, in whom it is often easy to treat, so that it is difficult to avoid the belief that the perverse chemistry must differ considerably at different ages; indeed, the only form of diabetes in the human subject which even resembles that which follows removal of the greater part of the pancreas in dogs is the rapid case which we see in children or young adults, and then the resemblance is often so close that we may assume that the conditions are the same. The high incidence of diabetes in Jews, its varying incidence in different nations, its comparative rarity in women, its different progress at different ages, the way in which different diabetics utilize different sugars, all point to considerable variation in the behavior of the body to carbohydrates. This is also seen experimentally, for if small amounts of lævulose are given to a dog whose pancreas has so far been destroyed that it cannot utilize any dextrose given by the mouth, only a little dextrose is excreted in the urine, and the greater part of the lævulose is utilized; this fact is sometimes of use in treatment. As cane sugar is in the body converted

into dextrose and lævulose a diabetic may sometimes get energy out of cane sugar when he could not out of dextrose. The more we reflect, the more we are driven to the conclusion that sugar in the urine is the result of several disorders which we cannot with our present knowledge separate from each other. It is sometimes urged that neurogenous diabetes is different from other varieties, but that not only may the sugar tolerance be under the influence of the nervous system, but also the diabetic abnormal metabolism of fats and proteins is shown by the well-known fact that excitement, worry, or shock will hasten diabetic coma.

ACIDOSIS.

The perverted metabolism of proteins and fats, which in a severe case of diabetes is the cause of a great part of the glycosuria, results in the circulation in the blood of oxybutyric acid, diacetic acid, and other acetone bodies derived principally from fats, they are excreted in the urine, and diacetic acid is easily recognized there by the ferric chloride reaction. Generally speaking, the presence of this reaction in a strong degree indicates a serious outlook. Oxybutyric acid and diacetic acid are met with in the urine in many conditions—e.g., starvation, severe vomiting, and after anæsthetics—and when they are present the patients often have dyspnœa without lividity, indistinguishable from the dyspnœa often seen in severe diabetes. It is believed that this is due in both cases to the stimulation of the respiratory centre by the increased acidity of the blood, just as it is normally stimulated by CO_2 and by lactic acid after severe exercise. Further, the dyspnœa of heart or renal disease when there is no lividity and the dyspnœa of high altitudes are believed also to be due to an increased acidity of the blood. All these forms of dyspnœa are therefore due to acidosis. Recently it has been shown by several observers that in diabetic coma, in which this form of dyspnœa is very striking, the alveolar air contains much less CO_2 than normal. Dr. E. P. Poulton, formerly my house physician, now medical registrar at Guy's Hospital, has shown by many observations, which will shortly be published, that this diminution of CO_2 in the alveolar air precedes the onset of coma and may be used to foretell it. He has devised a simple apparatus by which the alveolar CO_2 can be easily estimated. This is therefore an additional means of clinically telling when coma is imminent. The suggested explanation is that the increased acidity of the blood excites the respiratory centre to great activity, and in consequence of this increased pulmonary ventilation the CO_2 is got rid of rapidly. We must allow that the abnormal acids of the blood cause the dyspnœa of diabetics, but whether they produce the fatal coma itself is doubtful. Coma is far commoner in diabetes than in other varieties of acidosis; giving enormous quantities of

alkalies quite fails to save most cases of diabetic coma. Oxybutyric acid itself is not a coma-producing poison, and as Beddard says. coma is not seen in scurvy in which the alkalinity of the blood is much diminished. All we can say is that the cause of diabetic coma is unknown, but it is bound up with a condition of acidosis. We should never forget it is liable to be produced by suddenly withdrawing carbohydrates from the food.

TREATMENT.

Turning now to the treatment of glycosuria. The influence of the nervous system is well exemplified in the benefit that follows a tranquil life. A moderate amount of work without any anxieties, excitement, or worries suits best. I know a busy medical man who suffers from glycosuria which always disappears when he takes a restful holiday, although he does not alter his diet. The bad influence of excitement is seen not only in its effect on the sugar, but it is well known that it will induce coma. A long journey to see a celebrated physician brought on coma fatal in the physician's house. Although, unless the patient is very weak, some mental and muscular work is desirable in order to maintain the general health, yet both must always stop far short of fatigue, for he is losing much energy in the unoxidized sugar passed in the urine, and if the fault is that his muscular metabolism is disordered so that the muscles are not able to utilize the sugar brought to them it is easy to believe that it cannot be a good thing to make them do much work. It is clear that early hours and a country life are better than a town life, and, bearing in mind the liability of diabetics to tubercule, plenty of fresh air is desirable.

1. *Mild Glycosuria.*—The least serious variety is that in which the patient is over 60 and passes a little dextrose and no diacetic acid in his urine. Such a person, who often overeats, is probably only an example of the fact that while in the young sugar tolerance is high—as seen in the large amount of carbohydrate in comparison to their weight that children can eat—in elderly people it falls, although there are many adults who have an excessive craving for carbohydrates almost as strong as that which some have for alcohol. Usually this mild glycosuria is easily controlled by diminishing the sugar consumed, but it may be necessary to take less starch also. It might be urged that such a patient was only, so to speak, wasting the sugar that passed out, and therefore the intake need not be diminished, but, as we have seen, all clinical experience points to the fact that the long continuance of hyperglycæmia due to excessive intake of sugar may lead later to profound metabolic disorders shown by the presence of sugar in the blood derived from the proteins and to a less extent from the fats of the body and oxybutyric acid and diacetic acid from the fats.

2. *Treatment of More Advanced Cases.*—Supposing the illness to be more advanced than in the slight case we have considered, the patient should take his ordinary diet and have the total sugar in the urine estimated daily for the first three days of observation. We thus get the average daily sugar output on ordinary diet. Then the carbohydrate in the food should be slowly diminished, and unless the case is severe we shall reach a point at which no sugar appears in the urine; often this is not attained until all, or almost all, carbohydrates have been taken out of the diet. Patients frequently fail to take enough fats and proteins to make up for the loss of carbohydrates. Fats such as butter, bacon, fat ham, cream, and olive oil should be consumed in abundance if they can be digested, for they have double the energy yield of proteins. Some think that part of the sugar in the blood in diabetics may come from proteins of the food, but this is not a serious source of sugar in a moderate case, and proteins should be taken. The loss of bread is so keenly felt that proteins are usually taken partly in the form of diabetic breads and biscuits. It should be remembered that all these contain some carbohydrate, but with the best varieties it is very little, and none should be used that contain more than 5 per cent. Every medicinal man should occasionally have analyzed any diabetic foods his patients are using, for there are in the market from time to time preparations sold for diabetics containing mischievous amounts of starch. Patients vary much in their ability to eat these diabetic foods; none are really nice, but many varieties are sold, and usually the patient can take one or the other, especially if plenty of butter is used, or if all are still repugnant some of the diabetic jams or marmalades which contain no sugar and are sweetened with saccharine may be used to render them palatable. If it is desired not to allow any milk because of the lactose in it, one of the sugar-free milks in the market or washed cream mixed with albumin water made from white of egg may be given. Alcohol, being a food which entails no digestion, may be allowed, but, of course, not in a form which contains sugar; good whisky and water is as suitable as anything. When the patient has reached the diet on which no sugar is passed he should be kept on it for two or three weeks according to the severity of the case. Generally by then his sugar tolerance will be improved so that gradually some sugar may be added to his diet without causing glycosuria. I usually begin with lævulose, because many, but not all, diabetics bears this better than dextrose; a weighed quantity of either the solid or liquid form may be stirred up in tea. I have given dahlia tubers, for their starch is inulin, which is converted into lævulose. They may be steamed like potatoes, but not many patients like them, although they were a fashionable vegetable in France before the Revolution. Soya beans, too, ground into a flour may be tried, for they

contain less carbohydrate and more fat than almost any vegetable. Some patients can take fair quantities of skim milk without increasing glycosuria (hence the milk cure), others can take oatmeal (hence the oatmeal cure), others potatoes (hence the potato cure). Boiled oatmeal only contains 11 per cent. and potatoes only 18 per cent. of carbohydrate. If small quantities of any of these can be given without increasing glycosuria a little ordinary bread may next be tried, for patients bitterly feel the loss of their bread. The medical man must crush the belief the public have that toast is allowable for diabetics. It contains a little more starch than bread, and, like bread, may only be given in such small quantities as not to lead to increased glycosuria. When we have found the daily maximum number of grammes of whatever carbohydrate the patient can best take without increasing glycosuria, we may allow his in addition to his diabetic diet just under this number of grammes of that carbohydrate.

3. *Severe Cases.*—In many instances we find it impossible by reducing the carbohydrate in the food to cause the complete disappearance of sugar from the urine, for some of it is derived from proteins and some from fats. Then it is best, after slowly reducing his carbohydrate, to keep the patient for a time on such a diet that further diminution of the carbohydrate in the food does not lead to further lessening of the glycosuria. If this is done for some weeks it will often be found that the patient can then take, without increasing his glycosuria, additional carbohydrate, as, for example, oatmeal, which we have seen diabetics may bear well; if so, this will all be to his advantage. Such a case demands an estimation of the nitrogen excretion and a knowledge of the nitrogenous intake—indeed, as a matter of interest this is desirable for most cases except the mildest—as part of the sugar comes from protein both of the tissues and the food. The amount of sugar that may be derived from protein is obtained by multiplying the number of grammes of nitrogen in the urine by (according to some the figure 5, according to others 3.5. It is useful, in order to watch the progress of a case, to divide the grammes of sugar in each 24 hours' urine by the grammes of carbohydrate in food, plus possible grammes of sugar from protein. To avoid fractions it is customary to multiply by 100. The result, called the coefficient of the excretion of dextrose, gives an indication of the progress of the case. The lower it is the better for the patient.

If the presence of a large amount of diacetic acid or any other reason makes us apprehensive of coma we must go very carefully in the reduction of carbohydrates, for reduction, especially if extreme or sudden, is very prone to lead to coma; indeed, as is well known, coma is often heralded by a spontaneous drop in the sugar in the urine, and

then giving the patient sugar does not bring him out of the coma. In a severe case it is bad treatment to try and get rid entirely of the sugar from the urine. In milder cases the patient may sometimes be cut entirely off food for from one to three days for a time (Guelpa treatment), being allowed, however, water and tea to drink; this often facilitates considerably the disappearance of sugar from the urine. Hence in some "cures" the patients have starvation days from time to time, but, of course, we must be on the alert for signs of acidosis.

It is clear that to treat properly cases of glycosuria which are not mild attention must be paid to many details. The whole 24 hours' urine must frequently be saved, the sugar and nitrogen in it quantitatively estimated accurately, the carbohydrates and proteins allowed must be weighed, experiments must be made to see which variety of carbohydrate the patient can deal with best; it is well also to know the caloric value of his daily diet, and the patient should be carefully weighed every week. All this is very difficult to carry out in the patient's own private home. Some patients are so ill that they ought to go into a hospital or nursing home where these observations can be made; but a great many are not sufficiently ill for this, nor is it desirable, for they should be up and ought to be a good deal in the open air taking exercise. For them some home or institution in the country at which the urinary analyses and experiments with different foods could be properly made is highly desirable. Such an institution should have a medical officer who is a skilled analyst and is specially interested in and competent to deal with dietetic problems, and should make a particular point of the preparation of meals for diabetics. A patient would stay at such a place until it had been found which diet most satisfactorily controlled his glycosuria, for again it is worth while to remind you that different diabetic patients deal differently with the various varieties of carbohydrates, and in many instances carbohydrates should not be entirely withheld. When the diet had been found which suited the patient best, then he could return to his home and his medical attendant with detailed instructions as to how he should live. The mild cases in elderly people which are unaccompanied by any oxybutyric acid, and in which the little sugar that is passed is easily controlled by diet, need hardly go to an institution; they can be treated at home. As might be suspected, the patient with a comfortable income and ample leisure does best. The treatment of poor patients suffering from diabetes is very unsatisfactory, for although we may do them much good in the hospital, yet when they get outside it is almost impossible for them to afford diabetic foods, and many of them would not eat them even if they were provided for them. When these poor people are away from the controlling influence of a medical man they sooner or later take unsuitable

food, and they cannot lead the quiet and easy life that is so necessary.

4. *The Use of Drugs.*—I have not said anything about drugs in the treatment of glycosuria, for they are of little importance in comparison with diet; patients vary much in the readiness with which they respond to drugs, and it is impossible to tell beforehand whether or not drugs will benefit. But opium and codeia certainly sometimes help to reduce the sugar in the urine, nor, as far as I know, does either ever become a habit with a diabetic, and although there is a strong tendency to become comatose, yet I have never seen opium poisoning in a patient with diabetes. Aspirin is reported to diminish glycosuria occasionally.

5. *Coma.*—If a patient is in coma probably it is very rarely that we can save him, but as in such a condition the blood contains much oxybutyric acid, the attempt may be made to neutralize this by giving plenty of bicarbonate of soda. I usually give it in milk, for it is undesirable that these patients should not take any carbohydrate—in a bad case 80-100 grains may be added to each pint and the patient may drink three pints a day. Generally polyuria is present and so fluid is absorbed fast from the alimentary canal; therefore it is usually unnecessary to inject alkalis directly into a vein. If put under the skin they may cause sloughing; if for any reason they cannot be given by the mouth they may be given by the rectum. When, however, the patient is merely liable to occasional drowsiness, or coma seems likely either from the ease with which a ferric chloride reaction appears, or from the presence of sickness and abdominal pain, or because the case is very severe, or because the alveolar CO_2 is a little low, then much may be done to avert it by keeping the patient quiet both bodily and mentally, and by giving milk containing plenty of bicarbonate of soda. I have known patients who seemed liable to coma improve very much on such treatment and get well enough to leave the hospital. As excitement predisposes to coma bicarbonate is often desirable on admission to hospital or before an operation. Pyrexia may lead to an increase or to a diminution of the sugar. During an influenza epidemic a lady, not known to have diabetes, had fever, which was rightly thought to be due to influenza. After four days she became drowsy. The urine was tested; it contained no sugar, and so diabetic coma was excluded. The urine was not then tested with ferric chloride. The next morning she was comatose. The urine gave an abundant ferric chloride reaction, a minute trace of sugar was found in it, and the breath smelt of acetone. Here, no doubt, the pyrexia contributed to the disappearance of the sugar, but forgetfulness of the fact that absence of sugar may indicate the oncoming of coma prevented the testing for diastetic acid on the first occasion, and hence the correct diagnosis of influenza occurring in a diabetic subject was for a few hours overlooked.

I have already urged the probability that coma is only associated with and not directly due to acidosis and the extreme improbability of recovery from it. Still I remember the case of a young woman suffering from diabetes who was pregnant. Towards the end of pregnancy she became comatose. Cæsarean section was performed, the coma gradually passed away, and although still diabetic she was alive a year after the confinement and the child was well. She was able to have all the ease and comfort that money could buy.

PROGNOSIS.

The main outlines of the prognosis are well defined, but there are many exceptions. The younger the patient the worse the prognosis; this is nearly always true, but I knew a child of about a year old live a year, and one of five who also had phthisis lived considerably over a year. At the other end of the scale we have the elderly man whose sugar is easily controlled by diet; usually he passes no diacetic acid; he nearly always does well. Indeed, it is highly probable that a number of elderly persons, men especially, have a little glycosuria, but they go to their grave without its ever having been suspected, and (as far as we know, without its ever having done them any harm. Between the extremes of childhood and people who have passed the fifth decade, the younger they are the worse the outlook; it is especially bad if they wasted rapidly, if they have much diacetic acid, if they are often drowsy, if they have complications—e.g., phthisis—if they have an extreme degree of lipæmia—as, for example, when it may be seen in the retinal arteries—or if they must work hard for their living; but in most cases it is impossible to give an opinion until the effect of treatment is seen. I know persons who are alive and in fair health, although they have had diabetes for 20 years and whose urine always contains some sugar and often a little diacetic acid, but then they have always been very careful to carry out the treatment ordered.

CONCLUSION.

The time that should be taken by the opener of a debate has come to an end. I must ask your forgiveness for the incompleteness of what I have said, but I would plead as an excuse not only my own imperfections but also the extent and difficulty of the subject. About fifty years ago Sir William Gull asked: "What sin Pavy or his fathers before him had committed that he should be condemned to spend his whole life seeking the cure of an incurable disease?" Pavy, with steadiness of purpose, probably unmatched, worked at the subject from the age of 23 till after his eighty-second birthday, but neither he nor the many hundreds of others who have tried to unravel it have yet succeeded in fully explaining why sugar is sometimes found in urine, nor have they discovered how to cure diabetes.—*Lancet*, London, Feb. 7, 1914.

CURRENT MEDICAL LITERATURE

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MEDICINE.
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KERATIN IN THE TREATMENT OF HEPATIC CIRRHOSIS

S. M. Tzypkine, in *Semaine medicale* for December 10, 1913, is stated to have obtained good results in three cases of hepatic cirrhosis by administration of keratin, which he found experimentally to have the property of combining with gelatin, the chief constituent of connective tissue. The procedure adopted in these cases was as follows: Caffeine was first given for three or four weeks in the dose of 3 grains (0.2 gram) three times a day. Upon making sure that this treatment was inefficient keratin was begun, the caffeine being still continued for a time, however, to favor digestion and absorption of the keratin. At first the daily dose of the latter was five tablets, each containing 7.5 grains (0.5 gram). The keratin sometimes causes diarrhea, 1 to 5 cachets of 7.5 grains (0.5 gram) of bismuth subsalicylate were also ordered. As the portal circulation improved and the digestive disturbances grew less, the dose of caffeine and bismuth was reduced, while that of keratin was gradually increased to ten and even twelve tablets a day.

The first case treated was that of a man, fifty-five years of age, with considerable ascites, dilation of superficial abdominal veins, and edema of the lower limbs and scrotum. Three tappings had been necessary in one month. After starting the keratin treatment, no further tapping was needed. Five months later, when the patient was discharged, all edema and venous ectasia had disappeared, and the abdominal circumference was much less. In the second case, in a man of thirty-five years, the results were even better, the ascites being completely resorbed. The keratin was, moreover, perfectly borne, and bismuth never had to be given. The third case was in an alcoholic patient of twenty-six years, who had been tapped twice in eighteen days. Under keratin, the ascites disappeared completely in two and a half months, and four months later there had been no return of the fluid. The abdominal circumference was reduced from 104 to 80 cm., the superficial veins, constituting a distinct "caput Medusæ," could no longer be seen, and the normal digestive functions had returned.—*New York Medical Journal*.

CLINICAL SIGNIFICANCE OF UROBILIN.

R. L. Wilbur and T. Addis, concluding from an exhaustive study of urobilin lay special stress on the value of estimations of urobilin in the stools as a guide to the amount of blood destruction occurring in the body. While the interperation of urobilin findings in the urine is at present somewhat problematical,, the determination of an increased intestinal excretion rests on much firmer basis. Increase of urobilin is of diagnostic or prognostic importance in hepatic cirrhosis or stasis, malaria, anemias, pneumonia, infections causing hepatic changes, or hemolysis, cardiac decompensation, and severe nephritis.

TRUTH AND ANTI-VIVISECTIONISTS.

The general public has long realized that many of the changes made by anti-vivisectionists against the medical profession are utterly silly. How much credence can be placed in their recent charges that children treated in hospitals were inoculated with "loathsome diseases," even though such charges are apparently fully supported by a statement giving names and addresses of the children alleged to have been so infected, is well shown in some correspondence which Commissioner Goldwater has recently had with Dr. William H. Maxwell, City Superintendent of Schools. Not only were the children found not to be suffering from the "loathsome diseases," but it was also shown that there was absolutely no experimental work with such diseases carried on in any of these hospitals of the Department of Health.

The charge was also made that many of the children attending the public schools in the Bronx were suffering from venereal diseases and it was plainly intimated that these were due to experimentation and infection in city hospitals. In particular, B. S. Deutsch addressed a letter to the District Attorney of Bronx County, stating that forty-eight children, residing in Bronx County, many of whom were now attending the public schools, were suffering from a very grave venereal disease, namely, syphilis. Mr. Deutsch's statement goes on to say that the alleged infections of these children were the result of "inoculation which occurs without the consent of either the children or their parents, or else as the result of gross negligence or carelessness within the hospitals."

Commissioner Goldwater's investigators visited forty families named in the Deutsch list. Of this number, fifteen could not be found at the given addresses. Interviews were obtained with twenty-five families in which there were thirty-four children. Among these, not a single case of syphilis or of suspected syphilis was found. There was no

evidence of the inoculation of any of these children with serum or vaccine.—*Boston Medical and Surgical Journal*.

RELATIONSHIP BETWEEN EPILEPSY AND MIGRAINE.

G. A. Waterman, (*Boston Medical and Surgical Journal*), points out that epilepsy resembles migraine in many of its aspects. Both occur with great frequency as a direct inheritance from the family of either parent. Both recur with more or less periodicity in the individual. On the other hand the picture is that of an expulsion of sensory energy. Each may be preceded by an aura referable to a disturbance in a definite cortical area. Although the aura of migraine presents the visual type in the form of scotoma and hemianopsia, while epilepsy commonly exhibits the pneumogastric aura, or the sensory or motor disturbance of the arm, face, or leg; nevertheless, one may on the other hand have the migraine attack ushered in by paresthesia of the arm, lip, and tongue (with or without aphasia), while epilepsy may be preceded by visual disturbance, as dimness of vision or scotoma. Not only may the same sort of an aura introduce an attack of epilepsy or migraine in different individuals, but in both diseases the warning may make its appearance independently without being followed by an attack. Just as in epilepsy the numbness of the hand or the twitching of the fingers may come daily or several times a day over varying periods of time, only to be followed by the convulsive seizure at intervals of weeks, in the same way in a subject suffering from migraine attacks every few weeks preceded by scintillating scotoma, the author has seen the appearance of daily of the scotoma alone, over periods of weeks, each attack lasting from twenty to forty minutes. The occurrence of psychic symptoms associated with the attack of migraine or epilepsy has been described by various authors; and indeed the attack in either disease may be replaced by a psychic equivalent. Another common symptom frequently met with both in epilepsy and migraine is somnolence. The features indicative of a relationship between epilepsy and migraine may be classed under the following heads: (1) The interchange of one disease for the other in different generations of the same family. (2) The appearance of migraine in early life, giving place to epilepsy later, with a resulting disappearance of the migraine or diminution of the intensity of the migraine attacks. In these cases the epileptic seizures may be ushered in by the same aura which gave warning of the earlier attacks of migraine. (3) The development of migraine attacks in patients previously suffering from epilepsy, and in whom the epilepsy

has been cured by bromide treatment. (4) The appearance of symptoms of epilepsy in migraine attack of certain individuals.—*Medical Record*.

FOR CONSTIPATION.

A.

℞ Aloes,grs. xii;
 Extracti belladonnæ,grs. iii;
 Extracti nucis vomicæ,grs. iii;
 Extracti physostigmatis,grs. ii.
 M. et ft. pil. No. xii.

B.

℞ Resinæ podophylli,grs. iii;
 Extracti belladonnæ,grs. iii;
 Extracti nucis vomicæ,grs. iii;
 Extracti physostigmatis,grs. ii.
 M. et ft. pil. No. xii.

THE PROGNOSIS OF TRAUMATIC NEUROSES IN GENERAL.

Billstrom, of Stockholm, (*Zeitschrift für Versicherungsmedizin*), states that Oppenheim and with him most of the German authors regard the prognosis to traumatic neuroses as bad. Of Oppenheim's cases not one has been cured, and but seven have shown an essential improvement, although most of the subjects were controlled during an ample time. Or eleven patients cited by Nonnes, one had disappeared, one had committed suicide, eight after an eight-year period of observation showed no improvement. Burns believed that if all monosymptomatic cases should be classed together the prognosis would be made better than is really the case. Charcot emphasized that the prognosis of traumatic neuroses is worse than that of other kinds. Crocq made a distinction in prognosis between neuroses from head wounds and those without this causation, deciding prognostically in favor of the latter part. A series of French writers hold that the prognosis is good. Numerous statistics are available—those of Oppenheim, Schultz, Hoche, and Putnam, for example—which show great variation. Putnam obtained by far the best figures—only 22 per cent. negative results. The statistics presented by the other reporters show that the negative results have varied from 30 per cent. to 20 per cent.

There is another mode of calculating these results, to wit, the earning capacity after injury. Thus, of Nægelis' 138 cases complete effici-

ency was present in 115, partial in 20 cases. The dissimilarity in all these results is explained by the fact that the prognosis in these cases is essentially good, but is made worse by a number of factors. Some of these have been considered, but others cannot be determined and are grouped together under personal equation. Under certain presuppositions one may say that the prognosis is good, and as for the mild grade of invalidism in cases of traumatic neurosis the method of identification in private insurance societies—cash for six months without invalidism allowance—is ideal, and should be adopted by the Imperial Insurance Associations, and is best for traumatic cases.

Not only from the etiological viewpoint, but also from the prognostic (Crocq, Sachs), which separates traumatic neurosis due to trauma capitis from other species, both upon practical and technical grounds, must the latter be regarded as a special group. The prognosis is better than one is inclined to assume, and one may say that for true traumatic neurosis, at least in Sweden, the prognosis is good (over 90 per cent.), if regarded from the social viewpoint. Considered neurologically the prognosis is always doubtful. Along with an increasing period of observation the number of recoveries always increases.

Local and monosymptomatic forms of hysteria and neurasthenia give the best prognosis. When there is hereditary taint, low intelligence, high age, alcoholism (after injury), arteriosclerosis, etc., prognosis is made worse, but not absolutely bad. The social *milieu* acts both ways—for the better or worse, according to the case.

Repeated accidents are of the greatest importance because they seem to indicate a sort of predisposition for traumatic neurosis, while in certain cases they represent relapses. The kind of injury is also of influence on the prognosis, but a relation between the localization of the injury—save head and perhaps back injuries—and the prognosis has never been found by the author.

The written opinion has a bearing on prognosis and should not be shown to the patient. A general prognosis in regard to ultimate cure may be given as good. The compensation given seems to affect the prognosis, and the statute that these subjects are not to be regarded as invalids seems to have a counteracting effect. Litigation impairs the prognosis and indemnification save in the capital cases, when the reverse may be seen.—*Medical Record*.

THE RESPIRATORY SOUNDS.

Bueri, (*Rif. Med.*, December 20th, 1913), discussing the various sounds heard during respiration, physiological, and pathological, says

that the vesicular murmur is due to the impact of columns of air. The more central strata in the column of moving air impinging on the peripheral layers of air which are more or less motionless, and where the bronchi divagate either by flexure or by bifurcation, reflex waves are set up, and it is this combination of the central moving column of air and the reflex waves which causes the so-called vesicular murmur. Many other theories have been suggested, but, in the author's view, this is the most rational. The laryngo-tracheal murmur originates in the larynx, and differs more in quality than in intensity, the inspiratory sound being more intense in accordance with the physical laws governing the intensity of sound and the amplitude of the wave. The bronchial murmur (physiological as well as pathological) gains its greater intensity as compared with the laryngeal from the resonance of the pharyngeal cavity. The greater intensity of the expiratory murmur in pathological bronchial breathing probably depends on the closer association of the hepatized lung tissue with the thoracic walls during expiration, which renders the conduction of sound more easy. Where the lung is compressed and atelectatic, associated with a pleural effusion or with adhesions, the bronchial breathing may be louder during inspiration. In this case the fluid and compressed lung make one single conducting body.—*British Medical Journal*.

ANTIBODIES IN ACUTE LOBAR PNEUMONIA.

CLOUGH (*Johns Hopkins Hosp. Bull.*, October, 1913) studied the serums in a selected series of twelve cases recovering from acute lobar pneumonia in order to determine the constancy with which antibodies appear at the crisis, and if possible to determine their nature. Since previous investigations probably failed on account of a difference between the strain of the organism used in the tests and that with which the patient was infected, in all except one of this series the homologous virulent strain was employed. The activity of the patient's serum after crisis (or lysis) was compared with that of normal serum, and in the last two cases with that of the patient before the crisis, both as to its power to promote phagocytosis in the test tube. The phagocytosis tests were carried out in every case with the virulent strain isolated during the acute stage from the sputum (or blood) of the patient whose serum was tested. Of the twelve cases in which satisfactory protection tests were carried out with the serums of patients after crisis (or lysis), using the homologous strain of pneumococcus, nine had serums which showed definite protective power for mice as compared with normal serum, while three gave negative results, but in these only one specimen of serum was

tested. In two of the cases whose serum showed protective power after the crisis specimens of serum obtained during the acute stage showed no such power, and in two other cases (one fatal) in which the serum was examined only during the acute stage no protection was manifested. Three serums which protected mice from the homologous strain were also tested with a heterologous strain towards which they showed no protective power. Occasionally protective power cannot be demonstrated unless the serum is tested at frequent intervals during convalescence. In all except two the strains isolated were not phagocyttable in fresh, normal human serum, and were presumably virulent for man, and of the exceptions, which were highly virulent for mice, one cultivated from the blood of a patient a few days before death may also be regarded as virulent for man, in spite of its phagocytability in normal human serum, thus suggesting the necessity for caution in assuming that the virulence of an organism for man is always parallel with its resistance to phagocytosis in the test tube. Of eleven tests *in vitro* six showed definite phagocytic activity, and some of the remainder would probably have given positive results if suitable variations in technique had been employed. This activity, with one exception limited to the homologous strain derived from the patient whose serum was being tested, is qualitatively comparable with that of potent, immune serum, in that it brings about active phagocytosis of a virulent pneumococcus not phagocyttable in normal human serum. The active substances are bacteriotropines. In 2 cases tested phagocytosis in the peritoneum of the mouse closely paralleled that in the test tube, intracellular digestion of the cocci being marked. Since the phagocytic activity of the serum closely paralleled its protective power for mice both in incidence, time of appearance, and strict specificity as to the strain of pneumococcus affected, it seems justifiable to conclude that its protective action depends upon, and is directly due to, its power of promoting phagocytosis. Although a larger number of cases must be studied before finally concluding as to the rôle it plays in man, it is probable that this phagocytic activity, which can be shown to develop at the crisis in a large proportion of cases, and which is directed against, and largely limited to, the one virulent strain infecting the patient, plays an important part in bringing about recovery in man.—*British Medical Journal*.

THE CAUSATION OF HODGKIN'S DISEASE.

Three papers have appeared dealing with the causation of Hodgkin's disease: (1) "Cultural Results in Hodgkin's Disease" (Bunting and Yates, *Arch. Int. Med.*, August, 1913); (2) "An Ætiological Study

of Hodgkin's Disease" (same authors, *Journ. Amer. Med. Assoc.*, November, 1913); (3) "The Ætiology and Vaccine Treatment of Hodgkin's Disease" (Billings and Rosenow, *ibid.*, 13th December, 1913). In the *Centralblatt f. Bakteriol.*, 1913, lxxviii., Negri and Mieremet published a paper in which they claimed to have cultivated from two cases of Hodgkin's disease a diphtheroid bacillus to which they gave the name *corynebacterium granulomatis maligni*. Bunting and Yates had been working at the same condition for over five years and been attempting to obtain cultures from operation and autopsy material. In February, 1912, they were able to obtain cultures from a typical case of Hodgkin's disease. Their previous attempts had been unsuccessful, because the bacillus will grow only on special media. The bacillus they cultivated showed many forms, and this polymorphism is its most striking feature. They found plump short rods, small thin bacillus with polar-straining, comma-shaped bacilli, granular rods of variable size, etc. The organism stains by the Gram method. It grows best on a moist medium. So far they have not been able to obtain the organism direct from the lymph node, but altogether they have made seven successful cultural results. They think the organism they have found is the same as described by Negri and Mieremet, and suggest for it the less cumbrous name—*corynebacterium Hodgkini*.

In their second paper they describe the further steps they have taken to prove that the organism cultivated from the lymph nodes is the direct cause of Hodgkin's disease.

They have made inoculation experiments in the *Macacus rhesus* monkey. By repeated injections of the bacillus they claim to have produced progressive enlargement of a single group of lymph nodes which show histological changes identical with those found in human cases of Hodgkin's disease. They have produced in the glands of the monkey a chronic lymphadenitis with proliferation of endothelial cells, a beginning proliferation of the stroma, and eosinophilic infiltration. Clinically the monkey's blood showed an increased percentage of mononuclear elements, an increase in eosinophils following a primary fall, and an early increase of basophile blood changes decidedly characteristic of human Hodgkin's disease. They believe now that they have established a definite ætiologic relationship between this bacillus and Hodgkin's disease.

Billings and Rosenow go further, and offer more proof of this definite relationship. First of all they corroborate the finding of a bacillus in such cases—with all the characteristics of the *corynebacterium Hodgkini*. They have been able to isolate it in 12 cases—in three a pure culture, and in the other nine along with a staphylococcus. All their

patients had enlargement of the cervical lymph nodes, moderate enlargement of the inguinal glands and mediastinal glands being present in two cases. The spleen was enlarged in 10 cases, and very large in five of these. The blood picture varied with the length of the illness and the presence or absence of fever. The anæmia when present was of the secondary type. There was a moderate leukopenia, with relative increase of the small mononuclear cells. In the febrile cases a polymorph leucocytosis was present. Billings and Rosenow prepared vaccines of the diphtheroid bacillus—autogenous in all but one case, which received a vaccine prepared from other patients. The vaccine was given in doses of from 5 to 10 millions, and gradually increased to a maximum of 100 millions. It was given subcutaneously, and repeated every 5 or 6 days. In the febrile cases, after the second or third injection there was increase of temperature, rapid pulse, general weakness and discomfort. The non-febrile cases had only a slight general reaction—a little debility and some general muscular aching. The local reaction in all cases was very slight. The results were good. In six of the patients there was a uniform and rapid decrease in the size of the lymph nodes. One patient with very large lymph nodes, very large spleen, and considerable fever, had a violent reaction after the third injection. The glandular swellings and the enlarged spleen then very rapidly disappeared. Two of the patients died. One with large mediastinal glands died after the third dose from results of intrathoracic pressure. The other death also was the result of mediastinal pressure. The remaining patients at the time of writing are improving under the treatment, even those with severe symptoms—enlarged mediastinal glands, dyspnoea, anasarca and general debility—*Edinburgh Med. Jour.*, February.

TESTS FOR LIVER FUNCTION.

In diseases of the liver we have to very largely depend on gross changes revealed by palpation, percussion, etc. The information obtained is very often incomplete and untrustworthy. Various tests, therefore, have been recently suggested for estimating liver function—some satisfactory and others not—and many papers have lately appeared dealing with these tests. (1) Nesbit, *Dub. Journ. Med. Sci.*, 13th November; (2) Whipple, Mason and Peightal, *Johns Hopkins Hos. Bul.*, July, 1913, "Tests for Hepatic Function and Disease under Experimental Conditions"; (3) Bloomfeld and Hurwitz, *ibid.*, December, 1913, No. 274, "Tests for Hepatic Function: Clinical Use of the Carbohydrates"; (4) Rowntree, Hurwitz and Bloomfeld, *ibid.*, November, 1913, No. 273, "An

Experimental and Clinical Study of the Value of Phenoltetrachlorophthalein," *ibid.*, November, 1913, No. 273; (6) "A Test for Hepatic Injury—Blood Lipase," G. H. Whipple, *ibid.*, November, 1913, No. 275.

Nesbit's paper deals with four tests which he has used clinically but not experimentally on animals. These tests, he says, depend on three important functions of the liver—metabolism of sugars, assimilation of protein substances such as amino-acids, and the excretion of waste bile-pigments. The substances are given to a patient and the subsequent effect on the urine is tested.

1. *Laevulose*.—This is one of the oldest tests for hepatic function, 100 grams are administered to the patient, on an empty stomach, in tea in the morning, and the urine is then examined for some hours by any trustworthy sugar test. If even a trace of sugar is obtained there must be some disturbance of the liver, though the test is of no use for indicating a definite lesion. The test may be positive in a certain proportion of normal cases.

2. *Galactose Test*.—Forty grams are given. This amount usually produces no disturbance. The urine is collected hourly. In healthy cases sugar will appear in the urine for 1 or 2 hours up to about one gram. When the liver is diseased the galactose is eliminated for over six hours and the quantity may reach 20 grams. Nesbit found the test positive in all kinds of cirrhosis, in catarrhal jaundice, acute yellow atrophy, syphilitic disease of the liver, and fatty degeneration. In obstructive jaundice, tumors of all kinds, chronic passive congestion, and amyloid disease he found negative results.

In their paper on the "Clinical Use of the Carbohydrates as a Test for Hepatic Function," Bloomfeld and Hurwitz collect and summarize all the work in which these tests have been employed, and on the whole they are not inclined to form a favorable opinion of their accuracy and use. They consider that a great deal of confusion has arisen as to what information the sugar tests are expected to give. Writers have not distinguished between "hepatic function" and "liver lesion." The excretion of any sugar in the liver is taken as indicating insufficiency of hepatic function, and yet a great deal of an organ may be destroyed without interfering with the performance of its function.

Theoretically a lesion involving destruction of more or less of liver substance should give a positive result with the sugar test, but it may be that the uninjured part of the liver and other tissues may compensate. They sum up as follows: A consideration of the extra-hepatic factors involved in the sugar-regulating mechanism, the influence of the glands of internal secretion and of the vegetative nervous system, the ability of other tissues than the liver to handle sugar, and the ability of the

uninjured liver substance to compensate in disease, make the sugars theoretically unsatisfactory as tests for hepatic insufficiency. There are a series of great practical difficulties in applying the tests: namely, nausea, vomiting and diarrhoea after feeding, faulty absorption, intestinal fermentation, portal obstruction with collateral circulation, retention of sugars in nephritis, and inconstancy in the diet. There are serious objections in the methods as they have been applied; namely, the use of arbitrary amount of sugar, and the use of a definite standard of excretion. Sugars are therefore unsatisfactory as tests for liver insufficiency.

3. *Amino-acid Test*.—Amino-acids given in normal cases appear in the urine in very small traces, but with a disturbance of liver function a considerable quantity can be recovered. Ten grams of glycocholic or amino-acetic acid are given, and in liver disease up to 5 grams may be recovered in the urine. The process is somewhat lengthy but not intricate, and will be found fully detailed in Nesbit's paper.

4. *Aldehyde Test*.—According to Nesbit, this test, if his results are corroborated by subsequent investigations, will turn out to be by far the most serviceable in ascertaining whether disturbed liver function is present or absent.

The test depends on the fact that urobilin is present in normal urines in very small quantity, and any which is present is derived by oxidation on standing from urobilinogen. Bile pigment is ordinarily acted on in the cæcum by organisms of the colon group and reduced to urobilinogen. Most is excreted in the fæces, but some is reabsorbed into bile pigment. Therefore little or none passes through healthy livers into the general circulation. But if the liver cells be defective considerable quantities may get into the circulation and thence appear in the urine. Dimethylparamino-benzaldehyde gives a red color to urine if urobilinogen be present.

The test is simple and accurate. A 2 per cent. solution of this substance in 50 per cent. hydrochloric acid is used as the test. A couple of drops added to 5 c.c. urine produces a rose-red color if urobilinogen be present. Other substances in the urine do not affect the test. The urine should be fresh or the urobilinogen will be converted into urobilin.

Nesbit thinks this test positive and reliable in nearly all kinds of liver disturbance. It is best seen in chronic passive congestion, cirrhosis, amyloid disease, fatty degeneration, syphilitic disease of the liver, and tumors.

Rowntree, Hurwitz and Bloomfield in their paper consider aldehyde as purely a qualitative test for the existence of liver disease.

They quote Münzer as saying that the test is of importance in differentiating between atrophic cirrhosis on the one hand, and chronic passive congestion or pseudocirrhosis on the other. Sauer, however, agrees with Nesbit in stating that the test is positive for almost all diseases of the liver.

Three more tests for liver function have been described by American observers.

1. *Lipase Test*.—This enzyme is present in normal blood plasma or serum of animals and human beings in a definite amount—about 0.2 to 0.3 c.c.

From experiments in animals and clinical observations in human beings, the amount of lipase in the blood can be shown to be markedly increased in disturbances of the liver. Experimental injury to the liver, phosphorus, chloroform or hydrazine poisoning always cause a distinct rise in plasma lipase—more marked in the case of chloroform poisoning, which produces hyaline liver necrosis.

Whipple's report on clinical cases is as follows: A great variety of acute intoxications not associated with liver injury show no fluctuations in plasma lipase—acute hæmorrhagic pancreatitis, acute intestinal obstruction, acute or chronic nephritis with anæmia, leukæmia, pernicious anæmia, diabetes, etc.

Difficulties of diagnosis, he says, between true eclampsia and the various toxæmias of pregnancy are common and this test will be of great help, provided the name eclampsia is limited to that type of intoxication associated with portal hyaline liver necrosis. In such cases the plasma lipase is markedly increased. In many cases of supposed eclampsia normal lipase is found, and the cases subsequently proved to be not eclampsia but chronic nephritis, vomiting of pregnancy, with fatty liver, epilepsy, etc.

A definite rise above normal will always be found in all cases of true eclampsia, liver injury with necrosis due to poisons, intoxications, or infections, acute yellow atrophy, cholangitis, and abscess of the liver. Cirrhosis of the liver may show a subnormal lipase. The method of estimating the lipase is described in Whipple's papers.

2. *Fibrinogen Test*.—This substance is normally present in blood plasma. This blood protein has been shown to fluctuate with liver injury, falling to a low content at the time of the hepatic damage and returning above normal during the repair that follows. When the fibrinogen is much decreased it indicates a grave condition of advanced liver injury, acute or chronic. In certain cases of hepatic cirrhosis it is usually low, and it is of grave prognostic import.

3. *Phenoltetrachlorphthalein Test*.—The principle underlying the use of this substance is identical with that in the phenolsulphonaphthalein test of kidney function, viz., the specific excretion of a dye by a single organ and the decreased capacity for its excretion consequent upon lowered function resulting from disease. The tetrachlorphthalein is excreted by the liver into the bile. It is given by intravenous injection of the sodium salt. The stools are collected for 48 hours after active purgation by cathartic pills. The stools are then prepared and the red color obtained compared with a known solution of the salt. The experiments in animals have shown very reliable and constant results. In the case of liver injury produced by chloroform or phosphorus the output in the fæces amounts to a mere trace. The phthalein then comes out in the urine. Whipple considers that this test promises much in the study of derangements of the hepatic parenchyma. It will probably prove of much greater value than the other tests described, because by it one will be able to get quantitative values concerning liver injury.—*Edinburgh Med. Jour.*, February.

SURGERY

UNDER THE CHARGE OF A. H. PERFECT, M.B., SURGEON TO THE
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EARLY SPINAL SYPHILIS, WITH BULBAR PHENOMENA.

A Legris and J. Benech, (*Paris Medical*), report the case of a man twenty-one years of age who, only four months after the first appearance of secondary syphilis, showed pronounced motor weakness in the lower limbs, with loss of reflexes, muscular twitchings in the legs, thighs, and abdomen, soon after extending to the arms, and diminished superficial and especially deep sensation. A general ethymatous eruption was present at the time. This patient had received three injections of 0.3 gram of salvarsan soon after the appearance of secondary symptoms. In spite of further treatment with mercury and salvarsan, ocular and speech disturbances, facial tremor, dysphagia, and marked paresis of the upper extremities supervened. Sphincter disturbances, rapid emaciation, projectile vomiting, tachycardia, cardiac arrhythmia, and tachypnea (80 respiration a minute), together with expansive delirium, followed soon after. Six injections of 0.6 gram of neosalvarsan and seventeen daily intramuscular injections of 0.03 gram of mercury binioidide were thereupon administered, before improvement set in. Under further vigorous treatment, in the aggregate comprising 2.7 grams of

salvarsan and over one gram of biniodide within a month, without any toxic effects, practically complete recovery took place, the patient entering upon his military service without difficulty.—*New York Medical Journal*.

FURUNCULOSIS IN 19-MONTHS INFANT.

The infant was breast fed for one year and had experienced a perfectly normal development until the time of the present trouble. In October of 1912, there developed one superficial furuncle which was followed in a few days by three more that seemed to have their origin deep in the skin. These deep seated boils then continued to appear at regular intervals until December 30. The infant was under the care of a surgeon (or to be more accurate, a gynecologist) who had applied a strictly surgical treatment of the local condition without any attempted attention to the more general details. The treatment was invariably incision and drainage. Fifteen boils had been treated in this manner and as they did not develop about any particular area, the little girl was considerably scarred.

At this time, the father alarmed at the increasing scarring and the persistence of the development of the furuncles, asked Dr. Holt to see the infant. Dr. Holt then suggested that I see the infant first, and this was accomplished. At my first examination there were two boils in early stage of development. These were treated locally by thorough cleansing of their surfaces and the surrounding skin and the injection of tincture of iodine into the centre of the inflamed area. Both aborted. Besides a strict attention to details of elimination, diet and the avoidance of local irritation of the skin, a stock vaccine was administered and repeated on the third day. While I realized the advantages of an auto-genous vaccine in these cases, I did not feel that the patience would stand much more temporizing, so the stock vaccine was chosen.

The result was immediate. There has been no further development of furuncles and the area about the aborted ones is clear. Outside of fifteen scars left by the gynecologist, the girl shows no evidence of her prolonged attack. This and many similar experiences, emphasizes the fact that of all the vaccines, that for furunculosis is the most certain in its results.—*Long Island Medical Journal*.

TUMOUR OF PITUITARY BODY.

A. B. Taylor, B. Cs., M. D., Edinburgh, in the *Lancet* of the 22 ult., November, '13, reports an interesting case of tumour of the Pituitary body.

The patient a woman; aged 45; was first seen in 1908 for her mental condition. The main features were apathy, loss of memory and emotional conditions. At this time there was no fundus changes, vomiting or headache; field of vision could not be taken. Frequent incontinence of urine and faeces, but this was probably due to the mentality. She was sent to an asylum, but returned home in April, 1909, unimproved and having acquired epileptiform convulsions. In December, 1911, she was again sent to the hospital, where the following history was taken:

Female; aged 48; general nutrition good; medium height; pupils somewhat myotic; reaction sluggish; dull flexor plantar reflexes; knee jerks normal; no diminution of sensation to pain; urine normal; mental condition apathetic and unable to answer but the simplest questions; resented any attempt to make an ophthalmoscopic examination, but she evidently had considerable dimness of sight as evidenced by her actions in moving and eating. On admission there was no paresis; her mental condition became more marked and later on she had two fits, viz.: bilateral convulsions, slight weakness of the right hand and at times painless vomiting. On June, 1912, she was more than usually drowsy and passed into a condition of status epilepticus and died.

The post mortem examination showed extreme cerebral compression; the convolutions being markedly flattened. There was an ovoid tumour in the centre of the anterior fossa measuring 4.5 c.m., transversely and 6 c.m. antero-posteriorly; this was firmly attached to the sella turcica. The tumor was of firm consistency and nodular. A deep hollow was present at the base of the brain extending from the posterior perforated spot to the frontal pole. The floor consisted of the flattened convolutions of the mesial and inferior surfaces of the frontal lobes; the optic chiasm and the olfactory tracts, the cavities of the lateral and third ventricles were absent. The tumour was a spindle celled sarcoma.

The case seems to have been but very imperfectly taken and recorded during life is interesting on several points. Firstly, that there few symptoms of a gross nature excepting the mental ones, which carries out the observations of many that the brain in front of the ascending frontal convolution is mainly concerned in intellectual and emotional processes. Secondly the absence of total blindness which we should have expected considering the amount of pressure reposed on the chiasm and tracts; thirdly, the length of time extending over a period of four years for the condition was fairly well established when she first came under observation, in 1908, and lastly the nature of the convulsions which were of the continuous type just before death.—*Pacific Medical Journal*.

TREATMENT OF PUNCTURED WOUNDS.

D. N. Eisendrath, in the *Chicago Medical Recorder* for December, 1913, lays stress on the necessity of opening widely all wounds that can have resulted in the introduction of dirt from the surface into deeper parts. In all punctured or blank cartridge wounds he makes it a practice, conditions permitting, to anesthetize the patient and place an Es-march constrictor on the extremity, well above the wound, in order to see into all parts without being disturbed by the constant blood flow. The skin edges are then cut away so that the surface opening is as large as the widest part of the wound in the soft parts, and all foreign bodies, such as portions of blank cartridges, sloughs, etc., are removed. If the wound is due to a rusty nail penetrating the plantar surface of the foot, he usually makes a counter incision on the dorsum. The entire wound is then swabbed out with a three per cent. tincture of iodine, and loosely packed with gauze. No attempt is made to bring together the wound edges, unless the bleeding is excessive when the constrictor has been removed. In addition, 1,500 units of tetanus antitoxin are invariably injected as a preventive measure.—*New York Medical Journal*.

SPINAL SURGERY.

R Wallace, Chattanooga, Tenn. (*Journal A. M. A.*, April 4), discusses the surgical treatment of the spinal cord injuries with special referance to the decompression treatment by laminectomy. After mentioning the traumatic injuries to the cord and their causes, he says, the operative possibilites are limited but a discriminating diagnosis of the site and nature of the lesion should be made promptly and operative interference should be resorted to whenever feasible before greater or permanent damage to the cord results. A simple laminectomy affording decompression, he says, to the impinged of compressed cord has within the last few years giving striking results. It has been shown that several laminae and spinal processes can be removed with but little detriment to the patient and but slight danger of trauma to the cord. "An incision is made to over the spinous process; the laminae are freed by blunt dissection from the overlaying musculature and thoroughly exposed. By means of a chisel, saw forceps, the laminae are freed close to the transverse processes and removed. An aperture somewhat more than the diameter of the cord must be insured to give free and unrestricted decompression. Care should be taken not to wound nor open the dura unless special indication presents." A wide exposure of the canal is necessary and the angulation of the cord completely relieved.

Occasionally it become necessary to open the dura and examine the cord but it should be closed carefully with catgut. The muscles and aponeurosis should be approximated and the skin closed with linen, reeinforced if desired with silkworm gut. Drainage should not be employed. The scar tissue which forms is exceedingly fibrous and at times shows reformation of bone. The cord is well protected and the spine needs no special support, except in cervical fractures, and within a few days the patient may be changed from side to side bolstered with pillows; bowels and bladder should receive attention and, as soon as the patient will permit, faradism and massage may be used, increasing as the improvement warrants. In spite of the advice of Elsberg for conservatism in recent fractures of the spine and injury to the cord, Wallace says, with bone-pressure threatening the destruction of the cord, some of the most startling results were obtained by prompt interference. Early operation undoubtedly gives the most satisfactory results and he reports four cases in his own practice which he says, illustrate briefly the question of conservatism. In all laminectomy was performed except in one, a gunshot wound shattering the transverse process of the twelfth dorsal. There were slight symptoms of compression but more of irritation in this case and the patient rapidly recovered. The question of early operation must be decided with each individual case but spinal decompression by adequate laminectomy should not be postponed without good and sufficient contra-indications.

URETHRORECTAL FISTULA.

E. Viko, Salt Lake City (*Journal A. M. A.*, April 4), remarks on the low rate of recovery in the surgical treatment of urethrorectal fistula, and says that the standard operative procedures seem faulty in principle. The perineal body is split at its centre and a sound retaining wall laid open, one which is known to be hard to make water-tight by suturing. Viko describes a technic which has been worked out by him and found satisfactory. After the usual preparatory treatment such as curing of strictures, etc., the field of attack is just in front of the rectal wall up to and above the fistula and then in line of the fistula. A catheter is put in the bladder and retained for some days. In a low fistula the rectum is loosened in front and on the side, and in one high up it is dissected loose all round. If more room is required the postanal tissue is cut through to the coccyx. The sphincter left attached to the skin is cut through in front or in front and behind. If the fistula is above the levator ani, this is cut close to the rectum, so

also the recto-urethralis and if necessary, the deep perineal fascia exposing the prostate, bladder and peritoneal pouch. A purse string suture is placed round the fistula close to the urethra and tied, leaving the ligature ends long. The fistula tract is removed. Several flaps are now dissected loose alternately on the side of the tied urethral end and stitched in place one on top of the other, each suture line at a different plane. "The long ends of the urethral tie are drawn through the centre of the first flap and tied before the flap is stitched into place. The principle here is not only to build up a water-tight, but also a thick wall, whereby bringing the rectum farther away from the urethra. The rectal tie is buried by two or three pleats of the rectal wall. As the ends of the fistula tract, where they open into the urethra and the rectum, are, as a rule, funnel-shaped, these funnels should be tied and not cut; if they are cut, two large openings are produced which are hard to make water-tight by stitching, while if they are tied, this makes the opening water-tight. If there should be a large opening into the urethra which cannot be tied off, the urethra edges should be apposed by interrupted sutures, the sutures tied and their ends drawn through the centre of the first overlapping flap and tied. It generally spells failure to tie up a flap from each side of the urethra, their edges meeting and suturing opposite the urethral suture-line. This is like putting one sieve on top of another. After a thick wall has been built up between the rectum and the urethra, the rectum is partly twisted and a sound part is sutured to the built-up wall. The levator ani and sphincters are sutured in place. If the postanal space was entered, a good-sized drain is left there." In case both urethro-rectal and urethro-perineal fistulas are present he would wait until a later period before attempting to repair the latter.

SALVARSAN IN SYPHILIS.

Dr. C. Morton Smith, of Boston, in the *Boston Medical and Surgical Journal*, concludes his article thus:

- 1 The early hope of curing syphilis with a single massive injection of salvarsan has not been realized.
2. It is a potent remedy in healing all manifestations on the skin or mucous membranes.
3. It is more efficacious than mureury in changing a positive to a negative Wassermann reaction.
4. Its prompt action on early moist lesions has a decided effect in limiting the spread of contagion.

5. The early fears of damage to the cranial nerves appear to be groundless.

6. When given in proper amounts at proper intervals it is practically devoid of danger.

VALUE OF PITUITRIN IN SURGICAL SHOCK.

The author noted a marked effect upon the blood-pressure in patients to whom this product was given before they left the operating table. In an illustrative case, at the beginning of the operation the blood-pressure was about 105 mm. Hg, but dropped to 80 a short time after the abdomen was opened, and held approximately at this point throughout the operation. After the first injecture of pituitrin in this case, before closure of the wound, the blood-pressure increased to 85 and then to 90 within a short time. At this point a second injection of 10 minims was given, and forty-five minutes later the pressure registered 110. The pulse rate dropped in proportion to the increase in blood-pressure. No evidence of shock was noted although the operation had been rather protracted.

All the author's patients, before leaving the operating room, receive pituitrin, 15 minims, hypodermically. After recovery from anesthesia, the following measures are used: (1) Fowler position—fifteen inches of elevation of head of bed. (2) Enteroclisis, using glass nozzle with two or more openings. (3) Hypodermics of pituitrin, 15 minims every three hours for four doses. (4) Ice caps to the abdomen. (5) Sips of hot water and hot tea; no cracked ice or cold water for the first twelve hours. (6) Hypodermics of morphine, 1.6 grain, and physostigmine, 1.75 grain, for pain or restlessness, to be repeated in three hours if necessary. (7) If blood pressure is below normal, continuation of pituitrin and addition of hypodermics of camphorated oil, 2 grains every three hours. (8) Catheterization, if necessary, only every eight hours. (9) Water, coffee, tea, orange juice, meat juice, and broths may be given before first bowel movement, after which milk and soft diet may be allowed.

In 800 abdominal operations in which pituitrin was used, the author did not in any instance witness a symptom of shock except in two or three cases, in which a condition simulating "heart exhaustion" was noted. Whether or not this apparent exhaustion was due to overstimulation is a question; many other factors may have been responsible. The symptoms were only transient, the patient responding to stimulation after the administration of pituitrin was discontinued, and in each in-

stance making an uneventful recovery. The writer confirms the experience of others that pituitrin effectually removes gas from the alimentary tract and increases peristalsis. C. A. Hill (*Boston Medical and Surgical Journal*, May 15, 1913).

IODINE TREATMENT IN TUBERCULOUS PERITONITIS.

Pontoizeau is stated, in *Lyon medical* for January 4, 1914, to have made a trial of the method originally recommended by Grocco in the treatment of tuberculous peritonitis, viz., the subcutaneous injection on alternate days of 0.5 to 1 dram (one to two c. c.) of the following solution.

R̄ Iodine 5v (20 grams)
 Potassium iodide 5v (20 grams)
 Normal saline solution ʒviss (20 grams)
 Mix and make into a solution.

Satisfactory results, consisting of relief from the local symptoms and improvement in the general condition, were obtained. At times the injections proved to be painful. Where this is the case an ointment of iodine may be used instead.

In cases that have been subjected to celiotomy the iodine treatment is a most effective adjuvant, accelerating repair of the peritoneum and preventing complications.—*New York Medical Journal*.

DIABETES AND SURGERY.

F. Kraus, in the *Deutsche Med., Wochenschrift*, Dec. 1913, sums up the views that he has obtained from Naunyn, von Noorden, Minkowski, and Payr in regard to the question as to when surgical interference is indicated when the affection is due to or associated with diabetes.—Payr maintains that the only contraindication to operation is the associated presence of acetone and diacetic acid or a beginning coma. Aseptic wounds heal perfectly well if there are no arteriosclerotic changes, or if the recent operation has not been infected. Glycosuria should be reduced, if possible, previous to operation. Cosmetic and plastic operations should never be done. Chloroform is contraindicated as a narcotic and a local or spinal anesthesia used instead. In operations of the lower extremities an Esmarch bandage should not be used, but should be replaced by compression of the main bloodvessels and immediate stoppage of the hemorrhage. Suppurative and inflammatory processes

in the diabetic should be operated on quickly, despite a high sugar content in the blood. In furunculosis a dietetic treatment often effects a cure. In dry gangrene a conservative method of treatment should be instituted. If glycemia is moderate, with absence of the ferric chloride reaction, dietetic treatment should be considered first. It is important to determine the presence of hyperglycemia, which, if glycosuria is absent, determines the degree of latent diabetes.—F. Kraus's opinion is that it is desirable to free the patient of sugar, if possible, previous to the operation. In case of danger it is better to operate immediately irrespective of the present character of the diabetes. The best indication of danger, relatively, is acidosis, in which case sodium bicarbonate should be used prophylactically by mouth or intravenously. It is not advisable to use it subcutaneously. The anesthesia is determined by the condition to be operated in. Lumbar and local anesthesia by no means prevents postoperative coma. Naunyn considers that two points should deter from operation, viz., marked glycosuria and acidosis. Aseptic operations, if urgent, may be permitted even in the presence of marked glycosuria. Postoperative coma should be treated as an acid coma. According to von Noorden there are six sources of danger: 1. Greater predisposition to infection; 2, lessened resistance of the tissues and lessened tendency to smooth healing of wounds; 3, arteriosclerotic changes in bloodvessels; 4, weakness of heart muscle, especially in juvenile diabetes; 5, danger of narcosis in the presence of acidosis; 6, tendency to secondary hemorrhage, especially to be considered in operations on the eye.—*New York Medical Journal*.

THE SIGNIFICANCE OF ANAEMIA AS AN OPERATIVE RISK.

In a paper read before the American Gynaecological Society at Washington, in May, 1913, and published in *Surgery, Gynaecology, and Obstetrics*, September, 1913, Byford discusses the significance of anaemia with reference to the risk of operation. For this purpose he divides anaemia into two types—namely, anaemia with compensation and anaemia without compensation. In the former the patient's functions have so far compensated for the anaemia that she may be treated up to a certain point as a normal individual, in spite of the fact that the condition is not always relieved by the exhibition of tonics and dieting. In other words, in these cases, the anaemic habit has been acquired. Furthermore, it takes time for a general readjustment of function that will be compatible with the different quality of blood. The develop-

ment of this type of anaemia is gradual. The patient is seldom emaciated, and the blood pressure is usually about normal or slightly raised. The red cell count is seldom much below 4 million. Analysis of the urine as a rule shows a slightly diminished excretion of urea, together with a moderate amount of indican or oxalate crystals. In the second group of cases—namely, anaemia without compensation—the adjustment of the bodily functions has not taken place sufficiently to enable the patient to perform the ordinary duties of an active life. It occurs in association with chronic sepsis, faulty metabolism, drug habits, excessive childbearing, and mental distress. The patients are usually emaciated, with a rapid pulse, low blood pressure, and subnormal temperature. The urine is frequently concentrated, and contains an excess of phosphates or oxalates, whilst the excretion of urea may be less than the normal average. Byford observes that these patients are using up energy faster than they create it, and therefore they require more or less extended preparatory treatment to render them good operative risks. On the other hand, those patients who have been anaemic long enough to acquire an anaemic habit and who are leading a physically active life without great discomfort, and are not markedly emaciated, make much better operative risks than the degree of anaemia would seem to indicate. The author concludes that surgical interference should not be undertaken except in an emergency upon an anaemic patient until a careful investigation has been completed into the case-history, symptoms, and functions of the various organs. Time occupied in conducting such an investigation, whether it takes an hour, a week, or a month, is time well spent, and will help to reduce the mortality associated with cases of anaemia when operation is undertaken without previous forethought.—*British Medical Journal*.

GYNÆCOLOGY

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THE TREATMENT OF PERFORATING WOUND OF THE UTERUS.

Sigwart (*Berliner klinische Wochenschrift*) of Bumm's clinic says that in spite of repeated warnings physicians continue to use the curette improperly in cases of abortion, and as a result each year several cases of perforation of the uterus, with probably some serious injury to the

intestine, mesentery, or omentum, are presented. Therapeutic measures have for their object, first, to rescue the patient from a life-threatening condition, and secondly, to restore to usefulness a uterus, usually that of a young woman. The life of the patient is especially threatened when the contents of the womb at the time of perforation are already septic and septic material finds its way into the peritoneal cavity, or when, on account of injury to the intestines, intestinal contents get into the peritoneal cavity. The question whether the uterus can be preserved or not depends upon the nature of the wound itself and upon the probable danger of peritonitis—that is, whether it is likely that healing would promptly occur without infection. If the conditions were such as to render it likely that the sacrifice of the womb would save the patient from consecutive peritonitis, while on the other hand its retention would increase that danger, the womb would, of course, be removed even in young women. It is always a question, however, whether though the total extirpation of the perforated uterus, in cases infected or supposed to be infected, the chances really are bettered to such an extent as to justify such a mutilating operation, and whether leaving the uterus in place really does constitute such a great danger. In five cases treated in Bumm's clinic, in which both the uterus and the intestines were injured, conservative operation was done, and not only the lives of the patients saved, but the function of the genital organs preserved. In not a single case was the uterus sacrificed either on account of the danger of infection or the nature of the wound.—*Medical Fortnightly*, February, 1913.

RUPTURED ECTOPIC GESTATION SIMULATING GASTRIC ULCER.

This case was reported by C. H. Watson, M. D. as one of the ruptured ectopic gestation simulating gastric ulcer. The two latter cases are reported chiefly because they were evidences of possibly a faulty diagnosis or inability to discern the condition that was present.

The patient in this case was a school girl, 17 years of age. On February 14th last, I was called to see her at nine o'clock in the morning. She was moving restlessly about in bed and complaining of severe pain in the epigastrium extending around the right side to a point beneath the right scapula. The face was pale, the mucous membranes blanched and covered with a pronounced cold perspiration. She said that she had been seized with this pain about two o'clock in the morning and at the initial seizure had fallen to the floor and it had been con-

stant since then. At that time she appeared to lose consciousness for a few moments. The patient had not vomited. The bowels had been regular the night before. She had not urinated since the pain began. The stools were of normal color and consistency.

Physical examination.—Pulse, 105; respiration, 22; temperature, normal (98.3). There is an area of extreme tenderness over the epigastrium on deep vigorous pressure; slight discomfort elicited over McBurney's point; cursory pressure over the lower abdomen revealed no tenderness. A diagnosis was made of the ruptured gastric or duodenal ulcer and that was confirmed by the consultant who had seen the patient.

On being removed to the hospital (we must remember she was a school girl) the fact of the momentous proceedings, evidently under way, moved her to give us this history, namely, that she was married in December, 1912, secretly, had menstruated in January very scantily and the same had occurred at her February period. To aid matters, the patient said she had taken some medicine four days before the present attack. That changed the aspect of the entire case and vaginal examination revealed a mass on the right side, in front of the broad ligament, and operation revealed a ruptured ectopic pregnancy.

The point which makes me wonder was the fact that I got no tenderness in the lower abdominal segment and her entire pain seemed centered in the epigastrium. From my small experience that was rather unusual, but I presume that other members of the society are accustomed to seeing ectopic gestations giving pain in the epigastrium. That was the first instance in which I had seen that occur.—*Long Island Medical Journal.*

EUGENICS AND GYNECOLOGY.

Veits' lecture (*Deutsche Med. Woch*) on this subject may prove to be a classic. He begins with an account of a chondrodystrophic dwarf, pregnant, in whom naturally normal parturition was out of the question. Cesarean section gave birth to a fine, healthy boy. On the very same day a girl of statuesque beauty gave birth to a dead anencephalus. An outsider was struck by the logic of the coincidence, which would have passed unnoticed in a large clinic, and it became apparent that the opportunities of the obstetrician in the direction of eugenics were superior in character. In the first place he has the opportunity of recognizing tuberculosis in the newly born—in such cases as have not undergone therapeutic abortion. If a woman is known to be tuberculous, she should be sterilized or at least if pregnant, submit to interruption of

pregnancy. All these measures belong to the "eugenic sterilization" of Hirsch. The taint of epilepsy and imbecility has not yet been cleared up in full. The author has seen children of pronounced epileptics who possessed a high degree of mental excellence with no suggestion of epilepsy. The entire progeny of epileptics does not show any general inferiority. The same may not apply to the imbecile, for data are absent. It is true, however, that in a sound stock, an idiot may be born. This is explained apparently by heredity. Whenever the entire family tree can be traced, there will be found as equivalents, malformed children, cretins, etc., among the ascendants. In certain families chronic alcoholism in an ascendant is made to account for degeneracy in the progeny. The mere fact that a single descendant shows the taint is not sufficient to condemn the entire race. On account of lack of space an abstract cannot do justice to this long article, which could readily be expanded into a brochure.—*Medical Record*.

TREATMENT OF TOXEMIAS OF PREGNANCY WITH PLACENTAL SERUM.

Abraham J. Rongy (*Interstate Medical Journal*) was first led to try this serum by the results of his favorable experiences with the injection of fetal serum as a means of hastening or inducing labor, and by the belief that toxemia may be due to the absorption into the maternal circulation of certain substances derived from the products of conception. Trial has included only six cases so far, and in four of these the toxemic symptoms have been very promptly and completely controlled. Serum has been used in doses of five to twenty c.c., injected subcutaneously at intervals determined by the response and severity of the original symptoms. The main criteria used in the treatment of these patients have been the general appearance of the patient and the pulse rate. "If the pulse remains 100-110 there is no danger, even if they do vomit, the intoxication could not be very severe. A drop in the pulse rate takes place in these patients before the vomiting is controlled." Vomiting is not considered a contraindication to the use of food, but it is better to consult the whims of the patient and to see that she has sufficient nourishment.—*New York Medical Journal*.

A NEW OXYTOCIC.

S. Herzberg, of the University of Griefswald's Clinic for Diseases of Women, is enthusiastic over an oxytocic resultant upon the isolation

of the active principle of the pituitary gland, known as Hypophysin. (*Deutsch. med. Woch.*, No. 11, 1913). Tests at the University of Freiburg showed that 1 c. c. of Hypophysin corresponds in activity with 1 c. c. of the extract.

Herzbury used Hypophysin in 32 cases, using a 1:1000 solution, injected intramuscularly. In each case the effect was noticed in between two and three minutes.

A careful examination of this series of cases leads Herzberg to these conclusions:

1. Hypophysin causes uterine contractions which are originally poor and irregular to become good. It causes no convulsive pains and no continuous contractions. It is a safe resource for both mother and child, one which is effective at any stage of labor and causes no notable hemorrhage in the after-birth period.

2. Introduction of labor in overdue pregnancy, at term and shortly before the computed term, resulted promptly, and without any undue prolongation of labor.

3. Introduction of labor attempted several weeks before term was unseccessful although rhythmically occurring pains resulted, lasting over a period of several hours.

4. A combination of dilation and Hypophysin caused the pains to set in in two cases of placenta praevia a few minutes after injection of the Hypophysin. The bag filled with 500 c. c. of liquid was expelled in three hours, and thereupon version and extraction were at once performed with good effect.

5. Instantaneous contractions were obtained in cases of extremely severe atonia uteri, in which there had been a part failure of secale preparations when injected intramuscularly. In these cases success was obtained when the injection of Hypophysin was made directly into the uterine muscles through the abdominal wall (it might be added here that injections into the cervix, which have been made in a case of midl atony, had no result worth mentioning). However, one may, through a combination with secale preparations, bring the uterus into persistent contractions when ergotin alone would prove refractory.

6. According to the author's experience in cesarean section, the isolated active principle of the hypophysis, known as Hypophysin, acts in a manner identical with that of organic extract of the hypophysis in causing the detachment of the placenta and in diminishing the loss of blood during operation.

7. As Hypophysin possesses all the advantages of extracts of hypophysis and is free from unpleasant collateral effects.

8. As Hypophysin presents a solution of a pure, crystalline sulphate of the isolated active principle of the gland, and as this salt can be accurately dose, surety is, therefore, afforded that a Hypophysin solution of 1:1000 exhibits always the same composition and same degree of activity.—*Medical Times*.

ATROPINE IN DYSMENORRHOEA.

While investigating the causes of bradycardia and arrhythmia in the puerperium, J. Novak (*Wein. klin. Woch.*, December 11, 1913) found that the subjects of this condition, which he traced to increased excitability of the vagus, were frequently also the subjects of dysmenorrhoea. It was therefore natural to suppose that this was due to excessive irritability of the involuntary nervous system and that atropine would accordingly be beneficial. It has lately been shown that this drug in small doses stimulates and in large doses paralyses the movements of the uterus. This application of atropine is not altogether new, and Drenkhahn has lately injected a watery solution of atropine into the posterior vaginal fornix. The results were most encouraging. The author prefers to give atropine by the mouth or rectum, for, though the direct application of atropine to the uterus ensures a more extensive action with a relatively small dose, yet the disadvantages of this method, particularly in unmarried women, are obvious. Out of 38 cases of dysmenorrhoea the pain was continuous during mensuration in 2 cases, and in 1 case the character of the pain was not defined by the patient. In the remaining 35 cases the pain was spasmodic, suggesting colic of labor pains. In 30 cases the atropine reduced the pain to a negligible quantity or cured it completely. Backache and a sense of tension in the lower abdomen were scarcely affected by the drug. In 7 cases it was ineffective. Among these were the two cases in which the pain was continuous, not intermittent. Possibly some of the failures may have been due to an unsuitable dosage, for in small doses atropine has a stimulating effect on the voluntary nervous system. It is not surprising that the drug should fail in a certain percentage of cases of dysmenorrhoea, for this name probably covers various conditions due to many different causes, such as neurasthenia, infantilism, mechanical stenosis, and other anatomical changes in the uterus, hyperaemia, spastic contraction and inflammatory changes of the uterus. It is not clear how atropine relieves the pain of mensuration. It may reduce the spasmodic contractions of the uterus, and it may also check spasm of the uterine

vessels, to which some authorities attribute the pain in certain forms of dysmenorrhoea. A useful supplement to the atropine is uzara, which has been experimentally shown to stimulate the inhibitory fibres of the splanchnic system. As atropine paralyses the excitor fibres, the successful combination of these drugs is rational.—*British Medical Journal*.

GONORRHEAL VAGINITIS OF CHILDREN.

Treatment. Mixed autogenous vaccines of gonococcus and usually staphylococcus, streptococcus, diplococcus, colon bacillus, etc., used in 40 cases with uniformly good results. Average number of injections required for cure, 7. Initial dose, 25 to 50 million, then gradually increased. Interval between injections not less than five nor more than seven days. If after six weeks case still needs treatment, as shown by examination of discharges, a second vaccine should be made.—Wolff. . .

SERODIAGNOSIS OF PREGNANCY.

A. K. Paine (*Boston Medical and Surgical Journal*) says that while the theory of the serodiagnosis of pregnancy is simple, the actual practice of the test demands a high degree of laboratory skill and the most painstaking regard for the minutest detail. Thirty c. c. of the patient's blood are taken from one of the superficial veins; placental albumin is obtained from fresh normal placentas, and freed from all dialyzable substances. One gram of this placental albumin is placed in a dialyzer, together with 1.5 c. c. of the serum, and the dialyzer, is then washed in running water to remove any possible albumin contamination from its outer surface. It is then placed in a container with twenty c. c. of distilled water, the top of which should be twenty-five cm. above the top of the dialyzer contents and covered with a layer of toluol. The container is closed with a sterile cotton plug and placed in an incubator at 37.5 degrees C. for sixteen hours when the dialyzer is tested for the products of albumin digestion. Ten c. c. are taken free from toluol and placed in a small beaker; to it are added two c. c. of a one per cent. solution of ninhydrin, after which it is boiled for one minute the first bubbles appear. The color is red after thirty minutes. A clear or yellow color denotes a negative result, a violet, light lavender, or bluish purple color shows a positive result. This test, he thinks, is by the far most accurate method at our disposal for the diagnosis of

pregnancy, and available where the services of a competent laboratory can be had, but until some method is devised whereby the materials used, especially the prepared placental albumin, may be kept for some time and in a more convenient form, and trustworthy dialyzers are more easily procurable, it will not be generally available. It places in our hands a possible means of making remarkably accurate diagnosis of pregnancy should the exigencies of any case demand a prompt determination of the fact.—*New York Medical Journal*.

DIAGNOSIS AND TREATMENT OF PUERPERAL INSANITY.

Huggins calls attention to the disturbed mental condition so common in pregnant women and emphasizes the necessity of early recognition and treatment. Although the majority recover completely, there are women who, after being hospitalized for the insane for two or three attacks, become permanently insane. The essential cause of these psychoses in the pregnant or puerperal state is a predisposition, which means mental instability, to which is added the burdens of toxemia, exhaustion, or infection. Treatment is prevention, and in all women who manifest unusual nervous symptoms during pregnancy, rest, absolute rest, is the treatment *par excellence*. Excretion should be as thorough as possible throughout pregnancy.

ACUTE SUPPURATIVE SALPINGITIS.

Dr. Judd reported this case at the Brooklyn Gynecological Society: H. L., aged 22, married, Russian. Admitted to the Jewish Hospital October 2, 1913.

History.—Married one year, no children, one miscarriage three months ago, two months' pregnancy. (Curetted at another institution). Menses at 15, 28-day type, no pain, moderate flow, four days duration. Menstruated two weeks after curettage, September 26, 1913. Last regular normal menses five months ago. Present illness: About one month ago patient was curetted for an incomplete miscarriage, remained in hospital two weeks and left in good condition. On the 27th of September, five days before admission to the Jewish Hospital, patient was seized with sharp pains all over the lower abdomen, which came on suddenly, accompanied by severe chill and fever, no vomiting. Pain subsided somewhat and became localized in left iliac region. Vaginal bleed-

ing now increased. On admission to the Jewish Hospital she complained of pain in the left iliac region and right hypochondriac region.

Examination on Admission.—"Sick-looking woman." Temperature 101; pulse, 100; respiration, 24. Abdominal: Abdomen somewhat distended. Tender mass felt in left lower abdomen opposite anterior superior spine of ilium. Extreme tenderness over gall-bladder, with mass the size of a hen's egg felt just below the free border of the ribs. Rigidity of right rectus; tenderness on pressure over right lower abdomen. Vaginal examination; Multiparous introitus; cervix small, soft; uterus slightly enlarged, anterior position; pushed into right fornix. Extreme tenderness on moving uterus. Left fornix empty. Pressure upwards discloses lower edge of mass felt abdominally.

Blood Count on Admission.—October 2, 1913, W.B.C., 9,600; R.B.C., 4,490,000; Polys., 81 per cent.; Small lymphocytes, 19 per cent.; Hg., 60 per cent. Urinalysis; S.G., 1,022; trace of albumen, microscopically negative. Blood pressure, 110 Hg.

Patient improved, mass in gall-bladder region gradually disappeared, tenderness disappeared, condition of lower abdomen remained the same. Day before operation: Temperature, 99.6; pulse, 100; respiration, 24. Blood count; W.B.C., 9,400; polys., 83; mono., 17.

Patient taken to operating room on second day after admission. Examination under anæsthesia; small uterus, slightly backward, in median line. Cystic mass in right fornix. Left tube and ovary felt high up in pelvis.

Abdomen opened in median line. On opening peritoneum a considerable quantity of sanguineous fluid was observed. Left tube congested and enlarged and adherent with left ovary to sigmoid (mass felt abdominally). Small peritoneal cyst at fenestra. Acute suppurated salpingitis, involving the ovary on right side and adherent low in pelvis. Uterus large, congested, covered with lymph, small perforations on posterior surface near cervical junction to right side, covered with exudate. Right upper abdominal quadrant examined and in doing so about a pint of encystic serous fluid escaped. Gall bladder negative.—*Long Island Medical Journal.*

UTEROPELVIC TONICITY.

Macrez, in *Presse Médicale*, considers that an examination for what he terms uteropelvic tonicity affords important indications as regards prognosis and treatment in gynecological cases. After gently applying a one in 1,000 solution of mercury oxycyanide or one in 200 solution

of silver nitrate to the cervix and external os, a sterile metallic or rubber sound is carefully introduced in the cervical canal until resistance is met, i.e., to a depth of thirty to thirty-five mm. Normally, this resistance is easily overcome, causing slight momentary pain. Where uteropelvic tonicicity is decreased the sound passes through with little or no resistance or pain, while where there is hypertonicicity, it is almost impossible to push the sound past the obstacle and the attempt to do so causes sharp pain radiating through the pelvis along the sciatics, and occasionally general hysteroid agitation. Diminished uteropelvic tonicicity affords ready entrance to infection in the uterus; completely lost tonicicity involves various types of uterine displacement; increased tonicicity results in neuralgic pains for which no causative organic lesion can be found on clinical examination. Estimation of the uteropelvic tonicicity is especially advisable in subacute and chronic cases. Altered tonicicity in the presence of endocervicitis should lead one to suspect a congestive state of the body of the uterus or the annexa. In uterine displacements, the tonicicity is always lowered, but at intervals there are attacks of hypertonicicity, accompanied by sharp pain. In pelvic neuralgia there is cervical tenesmus so marked as to preclude passage of the sound, and in addition, on the vaginal surface of the cervix points, pressure upon which causes sharp, radiating pains lasting several minutes or even hours after the examination. Such a condition, which may eventuate in semi-invalidism, sterility, and dyspareunia, not infrequently follows operative work and acute or chronic disease of the cervix, and indicates a liability to recurrence of the previous disorder. In complete cervical atony, oftenest met with after the menopause, medical treatment is without effect. Where it is only partly lost, measures calculated to stimulate cervical tone bring about rapid general improvement. In the event of hypertonicicity, sedative treatment at thermal springs is often successful. Pituitrin will at times relieve atony, and belladonna, hypertonicicity. Brief seances of massage at short intervals and local decongestive measures are useful. Cautious electric treatment, with electrodes on the abdomen and over the sacrococcygeal region or in the vagina or cervical canal, constitutes an important measure. Where thermal spring treatment is not possible, nervous patients should receive cool baths in atony, and hot baths where there is hypertonicicity.—*New York Medical Journal*.

The Ontario Medical Association will be interesting this year. There will be a symposium on syphilis; an address on medicine, by Dr. Libman, of New York; one on surgery, by Dr. Finney, of Baltimore; one on gynaecology, by Dr. B. P. Watson, of Toronto; and many clinics.

PERSONAL AND NEWS ITEMS

Ontario.

The third annual conference of the Ontario Health Officers' Association will be held in Convocation Hall of the University of Toronto on May 7th and 8th next. A large attendance is expected and an excellent programme has been prepared and the prospects are for a very successful meeting.

Dr. Herbert E. Clutterbuck, a member of the staff of the Toronto Western Hospital, has gone to Britain for six months' post-graduate study.

The first annual report of the Wellandra Hospital, St. Catharines, is to hand. Dr. W. J. Macdonald is surgeon, Drs. M. J. Mulock, J. H. Vanderburg, and J. Herod are the physicians; Dr. J. G. Harkness is pathologist; Dr. F. S. Pefferdene is radiologist, and Dr. J. G. Sutherland is in charge of diseases of the eye, ear, nose and throat. There were 181 general operations, with three deaths, and 91 abdominal operations and no deaths. The three deaths followed operations for removal of thyroid with acute dyspnoea, amputation by Halstead's method, and resection of a tuberculous knee.

After a protracted illness, Charlotte Lord Brady, wife of Dr. Arthur H. Paget, died at the age of 81 years, at the family residence, Elora, of which place she was one of the oldest residents. She leaves, besides her husband, four sons and three daughters.

A pretty wedding was solemnized on Thursday afternoon, April 9th, at the home of the bride's aunt, Mrs. Charles Gilbert Davis, Woodlawn Terrace, Burlington, when Margaret, daughter of Dr. John Urquhart, of Oakville, was united in marriage to Dr. Frederick Sidney Minns, son of Mr. and Mrs. Francis Minns, of Wilberforce, Ont.

It was announced recently that the \$10,000 voted in the supplementary estimates for the Hospital of Epileptics at Woodstock was for a convocation hall for the gatherings of the patients. In connection with the hall there will be a workshop and a laundry. The building will be erected in the centre of the grounds and will be commenced this spring.

Mrs. John Thomson, of Hamilton, who died a short time ago, made the following bequests: The Mountain Sanitarium, \$1,000; the Salvation Army Rescue, \$5,000; Girls' Home, \$5,000; Infants' Home, \$5,000; St. Peter's Infirmary, \$1,000; Babies' Dispensary, \$5,000, and the Aged Women's Home, \$15,000.

The plans for a new Isolation Hospital for Chatham are making

good progress. A committee has been appointed to take charge of the work, and the Daughters of the Empire are assuming the task of raising the money. It is proposed to erect two cottages and a hospital tent, all equipped with the most modern appliances.

The Berlin and Waterloo Hospital Board has appointed Miss Mina Rogers, of Niagara Falls, Ont., superintendent of the hospital, to succeed Mrs. H. M. F. Bowman, recently resigned, at a salary of \$1,000 per annum. The new superintendent has been in charge of the General Hospital at Niagara Falls for the past six years.

A bill affecting cities was introduced in the Legislature by Provincial Secretary Hanna. This provides for the establishment of Reception Hospitals for the Insane by cities having a population of 100,000 and over. The plans and site must be approved by the Government and the institution must be under the control of the Provincial Secretary. The cost of the maintenance, after being established and equipped, in excess of the amount provided by the municipalities from which the patients are admitted, shall be paid by the Province.

Plans have been completed for the new Walkerville General Hospital, and bids for construction will shortly be called for. It is proposed to have the work started within a month. The building, when completed, will consist of three wings, but at present only one will be erected, at a cost of about \$75,000. The wing will be 128 by 44 feet in size, and will contain accommodation for fifty beds. The work has been undertaken by the Walkerville branch of the National Council of Women, and is assured of the hearty support of all classes of citizens in Windsor, Walkerville and Sandwich.

Miss Ellen M. Bilt, daughter of Dr. Reginald and Mrs. Bilt, was recently married to Mr. Lamon, of Dundalk.

A savage assault was made on Dr. H. C. Elliott, of Cobourg, by a party who seized him on the street and drew a revolver. Constable Ruse was close by and hastened to the doctor's assistance. The shot was deflected and entered the sidewalk. The assailant was examined as to his mental condition, as his relations state that he has been acting strangely for some time.

Some time ago a report was going the rounds by the press despatches that there were 48 physicians, two of them being females, were serving life sentences in Kingston. The word "physician" should have read "prisoner." There are no physicians in Kingston serving under a life term.

The new hospital at Cobourg, which was opened recently, cost \$50,000.

There are now twenty-three nurses under the Board of Health engaged in the tuberculosis work of Toronto. They visit homes, patients, and take part in the clinics.

The Stratford General Hospital last year had a deficit of \$879. The floating debt amounted to \$5,309.

Dr. K. McIlwraith and family, of Toronto, have gone to Europe. He will visit Italy, Germany, France and Britain, and see the hospitals in Freiburg, Paris, London and Edinburgh. He will return home in June.

St. Michael's Hospital intends expending about \$150 000 this year on additional accommodation and the nurses' home.

The Health Association of Peterboro has asked the city to give \$10,000 for a sanitarium for consumptives, the association agreeing to raise a like amount. The Province would grant \$4,000. This would be the amount required.

Dr. J. C. Bell, former Officer of Health for Raleigh Township, had his appointment cancelled. He brought action against the township, but the case was dismissed. He contended that it was the discharge of his duties that led to his dismissal.

Dr. McPherson, the Medical Health Officer for Peterboro, has resigned.

Goderich is going into the hospital business and will vote on a by-law to raise \$15,000 to improve the building on the Cameron Estate.

The Ontario Medical Association will meet in Toronto on 26th, 27th and 28th May. The work will be almost entirely of a clinical character in the various hospitals.

The organization meeting of a Medical Association for the Counties of Glengarry, Stormont, Russell, Dundas and Prescott was held 2nd February at the Chateau Laurier, Ottawa. President, Dr. R. Reddick; vice-president, Dr. J. P. Boyle; Sec.-Treas., Dr. E. Crown.

Quebec

The Medical Society of London announces that the Fothergill gold medal for 1914 has been awarded Dr. Adami, of McGill University, for his work on pathology and its application to practical medicine and surgery.

Dr. F. J. Shepherd, of Montreal, has gone on a trip to the Panama. He has retired from Professorship of Surgery in McGill.

Sir William McDonald has succeeded Lord Stratheona as Chancellor of McGill University.

St. Paul and Alexander Contagious Diseases Hospitals, of Montreal, admitted last year 2,265 patients, with 204 deaths and 2,001 discharges.

Of late there have been many cases of typhoid fever in the villages near Montreal.

The Lachine General Hospital has received a donation of \$10,000 from the Dominion Bridge Company.

Dr. Geddes has been appointed a Governor's Fellow of McGill University.

Hon. Dr. Lanctot, of Montreal, died recently at the age of 68 years. He was well known as a practitioner and public man.

During the past year the Royal Victoria Hospital admitted 5,813 patients. There were 373 deaths. There was a deficit of \$11,664.

In 1913 there were 1,391 admissions to the Western Hospital, Montreal. There is need of more accommodation and the institution has a considerable debt.

The Montreal Maternity Hospital admitted last year 1,243 patients. There were 1,108 births.

Dr. E. M. von Eberts has been elected by the Governors of the Montreal General Hospital to be one of the senior surgeons.

The 27th annual report of the Verdun Protestant Hospital for the Insane showed a deficit of \$2,527. During the year 114 private and 133 public patients had been admitted. A motion was adopted to make some suitable recognition to Dr. Burgess for his twenty-five years of service at the head of the institution.

The new building of the Sherbrook Hospital is almost completed. The old building is being remodelled. The daily cost of patients was \$1.60.

Dr. J. N. Roy has returned to Montreal after his trip of fifteen months' duration in Africa.

Maritime Provinces.

Dr. W. H. Hattie has resigned his position as medical superintendent of Nova Scotia Hospital, Halifax, and has been appointed Health Officer for Nova Scotia.

The hospital at Moncton has had a special grant of \$2,000 made it, and the grant for maintenance has been increased by \$500.

Plans have been prepared for a new four-storey hospital for St. John, N.B., to cost about \$280,000. It is expected to accommodate about 140 patients.

Dr. John F. Teed has been appointed surgeon to the Maritime Penitentiary, in the place of Dr. McDonald, deceased.

The debt on the Harbor View Hospital, Sidney Mines, of \$23,000, has been paid off.

The fourteenth annual convention of the Canadian Association for the Prevention of Tuberculosis will be held in Halifax on 13th and 14th July.

The Canadian Medical Association will meet in St. John, N.B., from July 7th to 10th.

Western Provinces.

The citizens of Regina have voted \$175,000 to be expended on the Regina General Hospital. A nurses' home will receive proper attention.

The Commissioner of Health for Saskatchewan has notified the municipalities that anti-typhoid fever vaccine will be supplied free of cost.

Lieut. E. B. Alport, Canadian Army Medical Corps, Regina, has been granted a certificate to the grade of captain, having passed the examinations.

Dr. Ernest A. Hall, Vancouver, was on a visit to Toronto, and other points East. He has returned home again.

Vancouver General Hospital will build a maternity pavilion, a building for infectious diseases, and an administration building, all at a cost of \$700,000.

Dr. Arthur Wilson has been appointed Medical Officer of Health for Saskatoon. He has been for some time secretary of the Saskatchewan Medical Association and Assistant Commissioner of Health.

During the year there were treated in the Children's Hospital, Winnipeg, 1,169 cases. This is a large increase over the previous year. There were 144 deaths.

The Victoria Hospital at Winnipeg cared for 1,062 patients last year. The death rate was 2.5 per cent. The daily cost was \$1.05, and the stay of patients in the hospital 12.3 days.

Last year the Portage la Prairie Hospital cared for 739 patients, at a cost of \$1.35 per day.

A sanitarium for tuberculosis is to be built at Calgary to cost \$30,000.

Dr. H. B. Stackpool has been appointed Medical Health Officer for Cardston.

The South Side Hospital at Edmonton is being pushed rapidly on towards completion. A by-law will be submitted to the people for the amount to complete the institution.

There is talk of spending \$250,000 on an Isolation Hospital for Edmonton. It is intended for scarlet fever, measles, erysipelas, diphtheria and advanced cases of consumption. Smallpox cases will be placed in the old building.

The Calgary General Hospital admitted 3,967 patients in 1913. The city paid \$16,065 for the care of pauper cases. The equipment of the hospital has been greatly improved.

The Antituberculosis League of Saskatchewan has asked the Government for \$100,000 on the condition that the league can raise a similar amount.

The average daily cost of the 117 patients cared for in the Lashburn Hospital, Sask., was \$2.63.

Victoria has made a grant of \$13,000 to the Jubilee Hospital to discharge debts, and \$12,000 for the care of indigent patients during this year.

Kamloops has made a grant of \$15,000 to the Royal Inland Hospital.

Dr. H. C. Davis has been appointed Medical Health Officer of Port Coquitlam, at a salary of \$400.

Dr. C. J. Fagan, of Victoria, who has been Provincial Officer of Health for fourteen years, has been superannuated.

From Abroad.

The Chicago Medical Society will hold its third annual meeting of Alienists and Neurologists of the United States, for the discussion of mental diseases in their various phases, July 14th to 18th, 1914.

Owing to a grant from the Board of Education and the assistance rendered by Mr. Austen Chamberlain's fund for the school, arrangements are now complete for the new course in tropical sanitation and hygiene, which will be held twice annually in the school. The first session will be open on the 1st May, 1914. The course will include medical entomology, hygiene, bacteriology, public health, elementary surveying and sanitation, helminthology, protozoology, etc.

Philadelphia recently had one of those sensations that seem to come pretty regularly. Six members of the faculty of medicine of the University of Pennsylvania were placed on trial for cruelty to animals in the performance of vivisection experiments. The prosecution is in the

Criminal Court and was instigated by the Women's Society for the Prevention of Cruelty to Animals.

The commission between Canada and the United States is still investigating the question of the pollution of the international waterways. The commission is hopeful of finding some means of controlling the evil.

One of the latest among the unique operations is the report from Baltimore that a child nine years old had its eye successfully grafted with the cornea of a pig's eye. The result is claimed to be all that could be desired, and the child's eye is clear with good vision.

Prof. Czerny has reported the treatment of 4,000 cases of cancer. He contends that the action of radium and mesotherium is identical. They can destroy cancer to depth of two inches, but not further. He is still much in favor of the knife as a means of treating cancer. The radium should be employed as an after-treatment.

At the American Surgical Convention recently held in New York radium as a treatment for cancer was severely criticized by Dr. Sparman, who represented Prof. Eiselberg, of Vienna. Dr. Abbé defended the use of radium.

Dr. Alexis Carrell, of the Rockefeller Institute, New York, has very emphatically stated that organs from one human body cannot be transplanted. This does not apply to tissue transplantation, as skin grafting. He said that transplantation of organs in the same creature are usually successful, transplantation from similar creatures usually fail, while substitution of organs in one creature by organs from an entirely different creature always fail.

At the recent Congress of American surgeons, Dr. J. M. T. Finney, of Baltimore, and others contended that women who have not had children, or who did not nurse them, are more subject than other women to cystic degeneration of the breasts. This was a protest against modern tendencies.

It is reported that the Imperial Office of Health for Berlin will investigate the alleged deaths caused by the administration of salvarsan.

Dr. Alexis Carrel, of the Rockefeller Institute, New York, is conducting a series of experiments on radium. So far he thinks the Beta rays are more useful as a therapeutic agent than the Gamma rays, which have received the credit up to date. His work will likely throw much light upon the uses of radium.

At the Royal Commission on Venereal Diseases the opinion was held that these diseases could not be isolated as other infectious diseases are, nor would reporting be of much use. Objectional names should not be given to the hospital wards for these cases.

Dr. George E. Brewer, of New York, has been appointed professor of surgery in the medical department of Columbia University.

Dr. S. S. Goldwater, formerly the distinguished administrator of Mount Sinai Hospital, has been appointed Commissioner of Health for the City of New York.

Report from Council Bluffs, Iowa, states that on March 11th the United States District Court granted a temporary writ of injunction against the enforcement of the Iowa sterilization law in a case filed at Keokuk.

Report from Chicago on March 5th states that Dr. Harry Pratt Judson, president of the University of Chicago, has been appointed chairman of a commission of the Rockefeller Foundation to investigate medical and sanitary conditions in China.

General William C. Gorgas, who has been in South Africa investigating the health conditions in the Rand gold mines, arrived in London on his way home two weeks ago. He was the guest of honor at a dinner given by the London medical profession.

A committee is at work to raise \$1,300,000 for Rush Medical College. This is to complete the affiliation with the University of Chicago.

Thomas Morgan Rotch, M.D., professor of pædiatrics in Harvard Medical College, died on 9th March, in his 64th year.

Dr. Egbert le Fevre, dean of the New York University Medical College, died March 30th, at the age of 56. The cause of death was a severe attack of scarlet fever.

During 1913 the birth rate per 1,000 in England was 23.87, or 0.02 points lower than that for 1912, which was the previous low record. The death rate for the year fell also from 13.32 in 1912, to 13.07 in 1913, while the marriage rate increased from 13.5 to 15.51.

Arrangement have been completed for a School of Tropical Medicine in Calcutta. The Government of Bengal will make a grant towards site and buildings, and a certain amount annually for its support.

Dr. Edward Skinner, professor of obstetrics, University of Sheffield, died on 12th February, aged 66.

Dr. T. Mitchell Prudden, emeritus professor of pathology in Columbia University, has been appointed by Governor Glynn, a member of the New York State Public Health Council.

In connection with the declining French birth rate, a comparative study has recently been made of the number of children in French families. Of 11,000,000 families, 2,000,000 were found to be without children, 3,000,000 had one child each, 2,500,000 had two, and 1,500,000 three children each. There were four children in 1,000,000 families;

five in 500,000; six or over in the remainder. There were 34 families with 17 children each and 45 with 18 each.

The New York Senate on March 20th passed the McClelland-Thorn Bill, which legalizes Christian Science healing by amending the Medical Practice Act so as to exempt from its provisions "any person who ministers to or treats the sick or suffering by mental or spiritual means without the use of drugs or any material remedy."

By the will of Prof. Thomas Morgan Rotch, of the Harvard Medical School, who died recently, the largest part of his estate will, on the death of his wife, go to the Infants' Hospital, Boston, to be used in connection with the Thomas Morgan Rotch, Jr., Memorial Building, which was erected not long ago by friends of Professor Rotch in memory of his son. A portion of the income of the estate may be paid, at the discretion of the trustees, to the Harvard Medical School, to be used for the department of pediatrics. The value of the estate has not been determined.

Dr. George McNaughton, clinical professor of gynaecology in the Long Island College Hospital, Brooklyn, died at his home from heart disease, after a long illness, on March 17, aged 57 years.

Dr. Henry Maule Crookshank, ex-British Controller of the Public Debt of Egypt, who was a Fellow of the Royal College of Surgeons of Edinburgh, and a member of the Royal College of Surgeons of England, died at Monte Carlo on March 25, aged 65 years.

The Massachusetts General Hospital, Boston, receives \$50,000 from the estate of the late Mr. Nathaniel Thayer, one of the trustees of the hospital, and the Boston Lying-in Hospital receives \$10,000, and the Clinton Hospital, Lancaster, \$5,000 from the same estate.

OBITUARY

HARRY JAMES SULLIVAN.

Dr. Sullivan died of pneumonia on 19th March, at the age of 39. He was born in Picton, Ont., and graduated from the University of Toronto in 1902. He located in Chatham, where he died.

A. G. BUGBEE.

Dr. Bugbee, of Derby, near Sherbrooke, Quebec, died in the latter part of January in his 90th year. Most of his life was spent in the

district of Derby. He retired from practice many years ago, but maintained his interest in public matters and gave much time to charitable work. He founded and endowed the Bugbee Commercial College at Stanstead. He is survived by his widow.

NINIAN CALVIN SMILLIE.

Dr. Smillie, of Montreal, died in Ottawa on 12th February. He was born in the Eastern Townships in 1858. He graduated from Bishop's College. For some years he was port physician at Gaspé. After spending two years in Europe, he located in Montreal where he continued to practice until his death.

D. D. McDonald.

Dr. McDonald, physician to the Maritime Penitentiary, Dorchester, died January, 23rd. He practised for many years in Petitecodiac. He was highly esteemed both as a citizen and practitioner. He is survived by one daughter.

BOOK REVIEWS

OPHTHALMIC SURGERY.

A Treatise on Surgical Operations Pertaining to the Eye and its Appendages, with Chapters on Para-operative Technic and Management of Instruments. By Charles H. Beard, M.D., Fellow of the American College of Surgeons; Surgeon to the Illinois Charitable Eye and Ear Infirmary; Oculist to the Passarant Memorial Hospital, Chicago; ex-President of the Chicago Ophthalmological Society; Member of the American Ophthalmological Society, etc. Second edition, revised and enlarged, with 9 plates, showing 100 instruments and 374 other illustrations. Philadelphia: P. Blakiston's Sons & Company, 1012 Walnut Street. Price, \$5 net.

The present edition contains a considerable amount of new matter, but the book is not materially enlarged over that of the first edition. A number of the more recent surgical procedures are also introduced. It is a very great pleasure to review so complete a work as this. On every page of it there appear the evidences of the care the author has taken that nothing should be omitted, or that no errors should appear. The illustrations are of a most satisfactory character, being so clear in every detail. They are also numerous and in this way serve as marked aids to the text. The author's descriptions of operations are well

stated and free from all ambiguity. In a work of this sort, which is wholly practical, and dealing with operative methods, this is of the utmost importance. All the instruments required in ophthalmic surgery are well featured in the illustrations. The treatment that should be followed after these operations receives due attention. The book throughout is thoroughly practical, entirely reliable, and very attractive in appearance. The old and well-known firm of Messrs. Blakiston & Company have done full justice to the publishers' share in this work. We have nothing but praise for the volume.

SIMON'S CLINICAL DIAGNOSIS.

A Manual of Clinical Diagnosis by Means of Laboratory Methods. For students, hospital physicians and practitioners. By Charles E. Simon, M.D., Professor of Clinical Pathology and Experimental Medicine in the College of Physicians and Surgeons, Baltimore. Eighth edition, enlarged and thoroughly revised. Octavo, 809 pages, with 185 engravings and 25 plates. Cloth, \$5.00 net. Philadelphia and New York: Lea & Febiger, 1914.

That this is generally recognized as the leading work on Clinical Diagnosis is shown by the demand which has carried it to its eighth edition. Such success indicates that it has won the hearty approbation of the profession; and this can result only from intrinsic merit of a high order. In this new edition will be found the advances which the last two years have brought forth. They are of great interest and importance. The account of the diagnostic methods based upon the appearance of the protective ferments of *Abderhalden* in the blood will be found up to date and, it is believed, a trustworthy guide for those who would venture into the attractive field of "organ diagnosis." Much of the technique in connection with the *Wassermann* reaction has been rewritten. The applicability of the complement fixation test to latent gonococcus infections having been satisfactorily established, the corresponding technique has been embodied in the present edition and should prove useful in many cases. The more modern methods of investigating the existence and extent of renal disease have been carefully considered, and should receive the attention of both the general practitioner and the laboratory worker. They are thoroughly practical, and should be employed as a matter of routine in the study of the corresponding diseases.

A very excellent and practical feature will be found in the second part of the volume, entitled "The Essential Factors in the Laboratory Diagnosis of Various Diseases." This section of 250 pages is devoted to the application of laboratory findings to diagnosis; and under the various diseases, which are alphabetically arranged, are given the essen-

tial points of diagnostic significance. This feature is unique in books on the subject.

In the new edition the text has been increased by about thirty pages and a number of new illustrations have been added. The colored plates are exceptionally fine.

PHARMACOLOGY.

Clinical and Experimental, A Ground-work of Medical Treatment, being a Text Book for Students and Physicians. By Dr. Hans H. Meyer, of Vienna, and Dr. Gottlieb, of Heidelberg, Professors of Pharmacology. Authorized translation into English by John Taylor Halsey, M.D., Professor of Pharmacology, Therapeutics and Clinical Medicine, Tulane University. With 65 text illustrations, and 7 in colors. Philadelphia and London: J. B. Lippincott Company. Price, \$6.00.

If one wishes to secure a thorough knowledge of the action of drugs, he should turn to the pages of this volume. In the clearest possible manner the authors set forth the action of drugs on the various organs of the human body. From this foundation the steps are taken along scientific routes for the treatment of disease. All through it is a most satisfactory work to read, as there is not a weak page in it. When one has to prescribe drugs in the treatment of disease it is a great satisfaction to have a clear conception of what their probable effects will be. This is just what this book sets out in the ablest manner. There is a very complete bibliography to each section. The authors discuss the action of the various drugs under the various anatomical systems, as the eye, circulation, digestion, the nervous system, the blood, metabolism, infections, etc. This is both useful from a scientific and practical point of view, as it avoids duplication and promotes a better understanding of the action of drugs. When one is through with say the nervous system, there is a feeling left that the subject from the aspect of this system and the drugs has been exhausted. We would like to see a copy of this book in the hands of every one who is engaged in the active duties of treating the sick or teaching students. Profound and thorough are the proper terms to use with regard to this work.

INTERNATIONAL CLINICS.

A Quarterly of Illustrated Clinical Lectures, and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Paediatrics, Obstetrics, Gynaecology, etc. Edited by Henry W. Cattell, A.M., M.D., and John A. Witherspoon, M.D. Vol. I., twenty-fourth series, 1914. Philadelphia and London: J. B. Lippincott Company. Charles Roberts, Canadian agent, 201 Unity Building, Montreal.

This volume takes up treatment and therapeutics, medicine, surgery and progress of Medicine during the year 1913. There are in all

fourteen articles. These articles have been contributed by men of wide experience and known as competent and reliable writers on medical and surgical topics. This volume is fully illustrated and calculated to take in a very creditable manner with the other volumes of this series. The general review of the progress of medical science during the year 1913 from the pens of Drs. H. W. Cattell, J. W. Walk and S. M. Wilson is of more than usual interest. In a clear but brief manner the achievements of last year are detailed. This portion of the book will repay the most careful study, and will leave the impression that it was a fruitful year.

SALVARSAN.

The Pathogenesis of Salvarsan Fatalities, by Sanetats-Rat. Dr. Wilhelm Wechselmann, Directing Physician of the Dermatological Department, Rudolph Virchow Hospital, Berlin. Authorized translation by Clarence Martin, M.D., First Lieutenant, M.R.C., U. S. Army; Late Clinical Assistant, St. Peter's Hospital for Stone and Other Urinary Diseases, London; Member Association of Military Surgeons, Berlin Urological Society, etc., St. Louis, Mo. The Fleming-Smith Company, Medical Publishers, St. Louis, U.S.A.

At a time when salvarsan is being so extensively employed as at present, this volume is most timely. The translator states in his preface that this book may "teach greater caution in salvarsan therapy." That the combination of drugs under this name is a powerful one, there can be no two opinions. That it is a most valuable therapeutic agent is now fully established. The need of the hour is care in its use and a proper selection of cases. There are a number of fatal cases reported with very exhaustice pathological findings. The number of cases that have been treated with salvarsan is now so large that the percentage of deaths is not great.

ELECTRICITY IN DISEASES OF THE EYE, EAR, NOSE AND THROAT.

By W. Franklin Coleman, M.D., M.R.C.S., Eng., ex-President of and Professor of Ophthalmology in the Post-Graduate Medical School of Chicago, ex-President of the Ophthalmological Society of Chicago; Professor of Ophthalmology in the Illinois School of Electro-Therapeutics, Chicago, etc. With 595 pages and 156 illustrations. Price, \$5.00.

Dr. W. F. Coleman has long been known to have been an ardent worker on the subject of electricity, especially as applied to diseases of the eye, ear, nose and throat. This book giving his long and extensive experience will be welcomed by the medical profession, and more particularly by those who are devoting their time and attention to diseases of these special organs. We can recommend this book as the wrok of an

able exponent of electrical treatment. We quote with pleasure from the review of this book as it appeared in the *Journal of Ophthalmology and Oto-Laryngology*:

"In this book the author discusses the elementary physics of electricity, describes electro-therapeutic apparatus and goes into the subject of phototherapy, the X-ray, ozone, the different electrical currents and electrical illumination for diagnosis purposes.

"It is a work which every eye, ear, nose and throat specialist who is interested in electricity will find of great value and the book will no doubt help to stimulate those who have not been interested in electricity to perfect themselves in the electro-therapeutic phas of the specialty.

"The author reports the cure and improvement of many conditions which have been considered hopeless by other means of treatment. Of 23 cases of optic atrophy, 17 were improved by electrical treatment, some as much as 500 per cent."

MEDICAL TREATMENT.

A Synopsis of Medical Treatment by George Cheever Shattuck, M.D., Assistant Physician to the Massachusetts General Hospital. Second edition, revised and enlarged. Boston: W. M. Leonard, publisher, 1914.

This little epitome gives a succinct account of cardiac insufficiency, nephritis, acute infectious diseases, gastric and duodenal ulcer, and synopsis of some drugs in frequent use. The leaf is printed on one side only and the other left blank for notes. There are many useful hints in the book on the subjects covered by it.

TRENT WATERWAYS SURVEY.

Commission of Conservation, Canada, Committee on Forests, Trent Watershed Survey. By C. D. Howe, Ph.D.; J. H. White, B.A., B.Sc.F. With introduction by B. E. Fernow, LL.D. Printed by the Bryant Press, Toronto, 1913.

This volume contains much information on the forests and water supply and the loss by fires in the Counties of Hastings, Peterborough, Lanark, Haliburton and Victoria. There are many illustrations. The volumes issued by the Commission of Conservation should receive careful study, as they reveal the conditions concerning the natural resources of the country.

SEX HYGIENE.

Teaching Sex Hygiene in the Public Schools. By E. B. Lowry, M.D., Author of "Herself," "Himself," etc. Chicago: Forbes and Company, 1914. Price, 50 cents.

This subject is being discussed a good deal just now. There are many wild views advanced, many of which if put into practice would be

very dangerous. This small volume does much to bring the discussion down to sound and practical issues, and to point out how good may be done without making the whole subject repulsive and mischievous. We would like to see this little volume have a large distribution.

MISCELLANEOUS MEDICAL NEWS

TORONTO'S VITAL STATISTICS.

Births, marriages and deaths, with the numbers of deaths from contagious diseases, are shown in this table:—

	March, 1914.	March, 1913.	Feb. 1914.
Births	1,207	1,075	1,093
Marriages	391	341	385
Deaths	572	642	446
Smallpox	0	0	1
Scarlet fever	6	3	2
Diphtheria	7	10	7
Measles	3	4	1
Whooping cough	4	1	0
Typhoid fever	3	2	1
Tuberculosis	27	29	26
Meningitis	0	1	0

CONTAGIOUS DISEASES IN ONTARIO.

The detailed returns of communicable diseases reported to the Provincial Board of Health during the month of March were:—

Diseases.	—1914—		—1913—	
	Cases.	Deaths.	Cases.	Deaths.
Smallpox	47	0	92	0
Scarlet fever	447	6	237	4
Diphtheria	198	19	144	18
Measles	682	6	1,446	16
Whooping cough	47	4	48	6
Typhoid fever	39	10	33	5
Tuberculosis	98	64	163	106
Infantile paralysis	1	0	0	0
Cerebro-spinal meningitis	6	5	2	2
	<u>1,566</u>	<u>114</u>	<u>2,165</u>	<u>157</u>

NOTED MEDICAL MEN IN TORONTO.

The seventh stated meeting of the American section of the International Association of Medical Museums met in the Pathological Building of the University of Toronto. Papers were read and demonstrations were given by about fifty members, chiefly from the United States, amongst whom were Professor Wm. Duane of Harvard, the noted radium specialist; Dr. Leo Loeb, St. Louis; Dr. Harvey Gaylord, Buffalo; Dr. A. S. Warthin, Ann Harbor, Mich.; Dr. T. H. Karsner, Boston; Drs. T. Maude, E. Abbott, J. G. Fitzgerald, L. J. Rhea, Cotton and Kaufman, of Montreal, and many others.

In addition, there were present about forty members of the American Association of Cancer research, who met at the Clinical Theatre in the General Hospital.

There was an interesting exhibit of medical museum appliances on view in the Pathological Building.

The Association of Pathologists and Bacteriologists met at the same time in the main building.

NASAL AND AURAL INFECTIONS.

There is a growing impression among specialists in those diseases that catarrhs of the nose and ear, especially chronic discharges, are commonly the results of mixed infections. If this view is correct, is it not a fair interference that Mixed Infection Phylacogen may provide a solution for one of the most perplexing problems that the profession has been called upon to solve? There is ground for such conclusion. Certain it is that the Phylacogen referred to has produced some very satisfactory results in numerous cases which have failed to respond to conventional modes of treatment. The writer recalls several cases of this character that have been reported in the medical press during the past year and a half.

An open letter to the profession which is appearing in leading medical journals over the signature of Parke, Davis & Co., adduces additional evidence of the value of Mixed Infection Phylacogen in stubborn nasal aural infections. This communication, which bears the title "A Letter to Medical Men," cites some cases that appear strongly confirmatory of the mixed-infection theory of etiology. All of these reports are interesting. At least one of them is remarkable: it deals with a housemaid who suffered almost total deafness in one ear for twenty-one years and whose hearing in the defective organ was practically restored after eleven injections of Mixed Infection Phylacogen.