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EDITORIAL.

THE POLLUTION OF WATERWAYS.

This very important subject was discussed fully by Dr. C. A. Hodgetts in his address before the Commission on Conservation. He points out the ways by which our rivers, streams and lakes are polluted, and the dangers arising from such pollution.

As the towns and cities grow in size the risk of contamination constantly increases. The time will come when all the natural water supplies of the country would become more or less impure. A table is given to show that the death-rate from typhoid fever per 100,000 of the population is as follows in the following countries: Scotland, 6.2; Germany, 7.6; England and Wales, 11.2; Belgium, 16.8; Austria, 19.6; Hungary, 28.3; Italy, 35.2; Canada, 35.5; United States, 46.0.

This would mean about 2,625 deaths in Canada and about 26,250 ill with the disease each year. Adopting the figures for the value of life and time lost in connection with typhoid fever, made use of by the Committee of One Hundred on National Health, we would have \$4,462,500 as the value of the lives lost, and \$5,250,000 as the value of the time lost; or a total of \$9,712,500 to be charged up to typhoid fever in Canada each year. This is a rather large bill.

The address then gives an epitome of the laws of the various provinces on the subject of streams pollution. It also quotes the main features of the laws in the United States, and in the countries of Europe. Dr. C. A. Hodgetts states that the provincial acts cannot deal effectively with the matter. In this statement we concur. He contends that there must be some form of federal act to deal with the whole question of streams pollution by sewage, and the waste from factories, etc. It is only in this way that the health of the people can be best conserved, and, at the same time, the least harm done to the industries of the country.

THE CONTROL OF BOVINE TUBERCULOSIS.

It has been well recognized that tuberculosis is quite common among cattle, and the disease is increasing rather than decreasing. The disease

is a preventable one and it is hoped that by means of proper regulations it may be in time entirely stamped out. The International Commission on the Control of Bovine Tuberculosis came to the conclusion that it was not possible to enforce a regulation for the compulsory testing of cattle by tuberculin and destroying those found to be infected.

The Commission urges that there should be as wide a use made of educational information as possible. The sale of infected animals should be limited to instances where they would be slaughtered, or used for breeding under strict regulations. An effort should be made to prevent infected cattle being shown at fairs. Shipping cars should be disinfected.

The tuberculin test is reliable when properly applied. When the disease is incubating, however, there may be no reaction. In like manner there may be no reaction if the disease is arrested, or when it is extensively generalized. On account of the slowness of the incubation, or the possibility of cases becoming again active, all animals that have been exposed, or apparently cured should be re-tested in six months or one year. The tuberculin test should not be used if the temperature is above normal, any animal that reacts once must be regarded as always tubercular, the subcutaneous method is the only reliable one, and that this test has no injurious effects on healthy cattle.

It is recommended by the Commission that legislation should be passed making the notification of all known cases compulsory. There should be some method of marking all cattle that are known to be tubercular, so as to be able to detect them in the event of shipping, or slaughtering them for food. Hogs are almost invariably infected by cattle.

In all cases where infected animals are found in a herd, the diseased and the healthy animals should be separated. The healthy animals should be kept under observation and tested, because they have been exposed. If a herd is very badly infected only a healthy or separation herd should be formed of the offspring. When it becomes necessary to destroy animals there should be a system of compensation as a temporary expedient.

It should be made compulsory when buying cattle for breeding or the production of milk that the tuberculin test be made use of. Milk should be pasteurized unless obtained from cows known to be free from infection. There should be legislation that would prevent the use of the tuberculin test except by those qualified to employ it.

There should be widespread education of the public on the cause and prevention of the disease. The aid of the public press should be sought in this work. It is recommended that the same laws should exist in all civilized countries; and that those countries should co-

operate with each other. It must be admitted that the prevention of tuberculosis among animals is one of great importance to the health of the people.

THE PREVENTION OF CRIME.

Dr. Daniel Phelan, Surgeon of the Dominion Penitentiary, at Kingstone, read a paper at the International Prison Congress, at Washington, which attracted much attention.

Dr. Phelan has long been a staunch advocate of special institutions for the training of children who show a tendency to crime or immoral habits. The prison is not suitable for the young offender. Neither is the asylum the proper place for such cases. The reformatory will not do, except in a few instances, for the child may not be strong minded. It is, therefore, necessary to have separate institutions for the care and training of children with criminal tendencies.

He maintained that crime in young people is generally the evil fruit of defective training and vicious surroundings. It would be much better to prevent crime than to be compelled to establish an expensive system for the punishment of crime. There should be special institutions for the training of young people with vicious tendencies. This class is quite different to the class of merely weak minds, but of innocent natures.

One of the great objects of society should be to prevent the commission of crime. Children with a tendency to be juvenile offenders should be sought out. They should be carefully studied and the merely weak minded should be separated from those with criminal propensities. It is in this way that much can be done, and the evil and criminal disposition replaced by one that is subject to the usages of society and good conduct. If society would seek to guard itself against the criminal, it must pay more attention to the youthful offender. When a child does acts that come under the criminal code, it is absolutely necessary to place it under proper care, and this can only be done by the state, and in institutions for the purpose.

In the management of these young offenders there should be no fixed curriculum. Each case must be dealt with on its merits. This would require an institution designed for this work alone and with proper trainers.

We would be inclined to go a step further and say that something should be done at even an earlier date than that suggested by Dr. Phelan. Mirabeau, the great French statesman, was once asked when he would begin the education of the child, and he replied "twenty years

before it is born." Dr. Phelan thinks, and properly, that we should try to prevent crime by training the wayward child, in order that we may not have to punish the wayward man. We should do more. We should try to prevent the birth of what may be a wayward child by preventing the marriage of defective and wayward adults. This is where the great work must be done. All sentimentality about marriage must be cast aside and proper regulations adopted that would restrain as far as possible the union of defectives. There are any number of marriages now taking place among epileptics, semi-criminals, weak-minded people, and chronic drunkards that ought not to be permitted. This is the *fons et origo malorum*; this is the polluted spring that give an unhallowed stream.

There are those who believe in the castration of male degenerates. We are of the number. It is simple, safe, cheap and effective. It is a most humane act to the person, as it very often takes away from him his tendency to crime, and his character undergoes a marked change, becoming more docile and placid.

THE FOOTBALL SEASON.

What number of players may be killed or permanently injured this year we do not yet know. That many will be seriously the worse for the season's playing there is no doubt.

Cock fighting has been ended by law. The bull fight has gone in most countries, especially in those in any pretence at civilization. The pugilist has now scarce any place to rest his foot upon. All this is the outcome of the plain fact that these sports were so brutal in their character as to bring upon them the opprobrium of public opinion.

In the case of football the game still flourishes, notwithstanding that the bull fight or the ring is not to be compared with it as agencies for causing loss of life or permanent disability. Among associated press despatches for this year we have noticed several instances of the evil results of the brutal way in which football is played. The following despatches are of this sort:—

Ithaca, N.Y., Oct. 28.—Following a meeting of the Cornell Athletic Council to-day Dean Smith announced on account of the death of L. B. Paine, who died last night after having receiving injuries in a football scrimmage on October 18, and out of respect for him, the game with Williams will not be played to-morrow. An autopsy will be held this afternoon in an effort to determine how much this football injury was responsible for the death.

Halifax, N.S., Nov. 10.—H. W. McLellan, the halfback of the Wanderers' football team, who was injured on October 29, while playing in a match against Dalhousie University, died this morning. He was 24 years of age, a graduate in Arts of Dalhousie, and gave promise of a most successful career. He was the son of the postoffice inspector.

Not very long ago two Ontario teams were playing a game of football. One young man on one of the teams died as the result of injuries. If a group of Canadians attempted to exhibit before the public a bull fight, it would be at once stopped. The law prohibits cruelty to animals, and properly; but apparently in the eyes of the law, man is not an animal. The consequence of this is that two teams may play football in such a manner as to injure the opposing players as much as they please.

All this is sport. Why not have the dual, and gladiatorial contests? It must have been a great flip for the Greek and Roman people to see the blood flow.

THE EHRLICH—HATA TREATMENT FOR SYPHILIS.

This treatment has now become widely known under the number "606." The reason for the selection of this number is because Ehrlich made 606 experiments or studies before he finally considered the remedy perfected.

The preparation is a compound of arsenic with aromatics. It is technically called Dioxy-diamido-arseno-benzol. It is a light colored powder which is put up in glass ampules. This powder is dissolved in methyl alcohol or glykol to which is added 10 ccm. of sterile water, then add one-half ccm. of one-tenth normal Na O.H. or sodium hydrate, then add water to make up to 22 ccm. This mixture is injected into the gluteal muscle in a dose of one-tenth to six-tenths of a gramme. One dose as a rule cures.

The treatment is used only in cases where there is no doubt of the presence of syphilis on clinical grounds or by the Wasserman reaction. The Wasserman reaction is usually negative in 24 to 48 hours after the injection. The spirochætæ disappear from the patient. This is an arsenical preparation. So far there does not appear to have been much danger in the use of the remedy. All arsenic compounds have a danger. Lately a case or two have been reported that serious consequences followed. But it might be said that any powerful remedy might occasionally give rise to some untoward symptoms. This seems to be the price that must be paid for all advances.

So far about 12,000 cases have been treated, and we gather there have been 7 deaths. Two of these were moribund infants, two or three others had very serious diseases of the nervous system. Ehrlich lays special stress on the point that the treatment should not be employed in patients with advanced lesions of the nervous system. Some of these deaths it would appear are not properly to be charged to the treatment.

Whether the improvement will be permanent or not time alone can tell. If it has the power of destroying the spirochaetes, the cure must be lasting.

MEDICAL INSPECTION OF SCHOOLS.

With the merits or the demerits of the difficulty that has arisen between Dr. Helen MacMurchy and the Management Committee of the Board of Education, we do not propose to say much at present.

On the question of medical school inspection we have on several occasions expressed our views. We have always taken the ground that prevention is much better than cure. We hold that the money expended in this way will be one of those instances where the investment will yield the hundredfold profit.

Two opinions are advanced by opposing sections of the community in most cities where medical inspection is being introduced. One of these claim that it should be under the city Medical Health Officer and the other that it should be under the Board of Education. With this latter opinion we are in entire accord.

Medical inspection of schools is a matter that belongs to the welfare of the schools. The inspector is engaged by the Board of Education and paid out of the funds at the disposal of the said Board. The dismissal of the inspector is also a power vested in the Board of Education. The regulation of the inspector's duties should also be laid down by the Board.

It might be that the best plan would not be chosen at first; but experience brings daylight in such matters. It would have been so in Toronto. It might be the opinion of some that Dr. Helen MacMurchy acted with undue haste. No one will question her motives, as no doubt she was actuated by the best of intentions for the good of the schools. It might have been better to have gone on with the duties assigned her by the Board and made the best of conditions, and to have approached the Board in the usual way with suggestions that would make the inspection more efficient, and render the work of the medical inspectors more easily carried out.

To our mind it matters little what system has been adopted in New York. What we must do here is to develop a method that will suit our own special needs, and fall within the appropriation of the Board for this purpose. Of one thing there can be no doubt, namely, that so long as the medical inspector is an appointee of the Board, the inspector must be governed by the rules of the Board. The Secretary of the Ontario Board of Health is a medical man, but he is amenable to the rules laid down by the Provincial Cabinet. The medical inspector must, therefore, be under the Board of Education.

We trust that the Board of Education may be able to find some course which will enable Dr. MacMurchy to work along with it in devising an ideal system of medical inspection of the schools. The question is a simple one and admits of a ready solution. Patience will find the way.

As things stand at the moment of writing we do not see any reason why the Board of Education and Dr. Helen MacMurchy could not arrange their differences. We appeal to the good sense of the Board of Education to adjust this apparent misunderstanding. Any personal words that may have passed between Dr. MacMurchy and Inspector Hughes should be allowed to die of neglect. Deal with the principles of the case.

FIRE PROOF PUBLIC BUILDINGS.

We have on several occasions referred to the necessity of having asylums, hospitals, refuges, prisons, schools, homes, etc., made of fire proof construction. This costs a little more at the time; but it pays in the end. Wooden beams for steel ones is poor economy.

Just the other day there was a fire in the Asylum at Brandon, Manitoba. In a short time the building was a complete ruin. The press despatches state that the loss amounts to \$500,000, and that against this there is \$250,000 of insurance.

Here there is a net loss of \$250,000. There is also the inconvenience to the work of the asylum. There is the danger of the patients who are now housed in a temporary fashion. There was also the danger that many of them might have been burned to death. There is the further danger that many of them might have escaped and done much damage. All these risks were run for the sake of a little false economy. Twice in Toronto have libraries of great worth been destroyed.

But we are only concerned with such buildings as the state uses for the housing of human beings. People may live in fire traps if

they will; but we contend that the state must not undertake the care nor permit any one to do so, of the insane, the sick, infirm with age, the child, nor the criminal, in buildings that are not fire proof. If this age of stone, brick, cement, steel, slate, etc., there need be nothing that will burn but the bed clothing and the furniture. These do not cause a general conflagration. They are always within the control of an ordinary attendant.

We trust that the fire in the Brandon Asylum will drive home the force of Shakespeare's words "Ill blows the wind that profits nobody." If this terrible warning only induces all the provinces to insist on fire proof buildings in future, and to reconstruct those now in use that are not of such a character, in the end all will be thankful for the Brandon fire, as no lives were lost. Some day there will be a holocaust. Instead of explaining to the electors the loss of some money, the authorities will be called upon to answer for several hundred lives.

GOOD MILK.

No city should tolerate bad milk. It should be laid down as a working rule that those who deal in milk must keep healthy cows, house them properly, and give them good food. Then the milk should be cared for properly until it reaches the consumer. Any one who cannot or will not comply with these conditions, should be put out of business.

Many times have typhoid fever outbreaks been traced to the infection of milk. A dairy maid has typhoid fever and safe precautions are not taken, the result is that the milk supply is infected and many are made ill and some die. This sort of thing no city council should allow for a moment. If such should be permitted, such a council should be charged with criminal neglect. What holds good in law for the individual should be made to hold good for the municipality.

The other day we learned that Dr. Hastings, the Medical Health Officer for Toronto, has put the ban upon a dairy where there were two cases of typhoid fever, and with a polluted well. Would that the medical health officers for other municipalities would do likewise! If they would there would soon be a material reduction in the number of typhoid cases throughout the Dominion.

We have all read of the man who came along at night and sowed tares among the wheat. It is a worse sort of an enemy that comes along and sells typhoid fever bacilli in his milk and thereby sows them in the intestinal canals of his trusting consumers. But the municipal

authorities cannot be held guiltless which permit the sale of impure milk and of low standard quality.

THE DR. B. E. HAWKE CASES.

Dr. B. E. Hawke, of Toronto, was recently tried on two charges. One of these was the case of Emily Forbes, a girl of 18 years of age. Magistrate Denison dismissed the action. Miss Forbes became confused in her dates, and the doctor gave a flat denial of having performed any criminal operation. The Magistrate had no recourse but that of dismissing the case.

The other action arose out of an alleged illegal operation on a girl, named Florence Watson, whose age was given as 17. This case was tried by a Jury, Mr. Justice Britton presiding. The Judge charged strongly in favor of Dr. Hawke, pointing out the character of the girl's evidence and that the doctor had met her story with a complete denial. The jury brought in a verdict of not guilty.

We congratulate Dr. Hawke on the result of these trials. While we do this we do not hesitate to advise him, as a member of a noble profession, and one which all should try to uphold, to keep reading notices about himself out of the newspapers. It does not look well in the eyes of medical men to come across items in the newspapers about the treatment of certain diseases.

Doctors will seek their own best interests if they will conduct their practice along the well-established usages of the medical profession. What these usages are is well known and need not here be mentioned. In the end it will pay better to contribute something for membership in a reputable medical society than to pay for reading notices in the lay press.

FLIES AS CARRIERS OF DISEASE.

Dr. Graham-Smith has given this subject careful study. He has found that flies carry various organisms for a period of from 2 to 6 days.

Flies are ravenous feeders and their crop acts as a reservoir for germs if these be in their food. Flies defaecate about four times a day, but regurgitate or vomit from their crop oftener. The germs experimented with were those of typhoid fever, tuberculosis, enteritis, diphtheria, and cholera.

In the case of typhoid fever the organisms could be recovered in two to six days after infection by the flies. Tubercle bacilli lived in the fly for three days. The cholera vibrio was found two days after being fed by the fly. The organism of diphtheria did not live so long.

From these numerous and elaborate experiments it becomes quite clear that flies are potent factors in the spread of disease. It has been shown by Faicherie that flies may become infected naturally by feeding on infected matter.

For many years the CANADA LANCET has urged this position. One wonders that there ever should have been any doubt upon the matter. All that is required to convince one is to watch the habits of an ordinary house fly. Dr. Hewitt, of Ottawa, who is an undoubted authority upon this subject, addressed the Women's Institute of Ontario in Toronto a short time ago. He arraigned the fly as a spreader of disease. The germs of typhoid fever, tuberculosis, cholera and anthrax were carried about by flies.

The remedy is to destroy the breeding places. Stables should be kept clean, and garbage tins and boxes covered.

DOMINION REGISTRATION.

The CANADA LANCET has steadily advocated the cause of a national profession and a common standard for all. That this view is gaining ground we are quite certain. The following item of news is very gratifying:

"Ottawa, Nov. 14—Dr. Black, the Liberal member of Hants, N.S., has prepared a bill, which he will introduce at the opening of the session, permitting physicians authorized to practise in any province to practise in all the other provinces of the Dominion.

"It is understood that all the Provincial Governments and other interests have been consulted, and that the bill will not meet with any opposition.

"The bill may also admit to practise physicians from any country in the British Empire which extends a reciprocal privilege to the physicians of Canada."

There is every reason to feel hopeful that the bill in its amended form will pass the Federal House this session. If so one of the most important acts in the history of this country will have found its way to the statute books.

ORIGINAL CONTRIBUTIONS.

THE MEDICAL MAN AS A WITNESS.*

The Honourable Mr. JUSTICE WILLIAM RENWICK RIDDELL,
King's Bench Division, High Court of Justice for Ontario.

SOME years ago, while yet at the Bar, I prepared for the students in Medicine of the University of Toronto, a series of lectures upon "The Doctor in Court," in which I dealt with the medical man as a judge, as plaintiff, as defendant and witness. In the summer of 1903, the officers of the Ontario Medical Association asked me to address that body upon "The Medical Expert as Witness," and I gladly acceded to their request. My address, based as it was upon one of the lectures to the medical students, was given without manuscript or notes, and was really conversational. The stenographer of the Association reported the address; and it appeared in some of the medical journals of Toronto. I had no opportunity of revising the transcript and never saw the address in print until the present year.

When I was asked to address this body on the subject of "The Medical Man as a Witness," I re-read my former remarks and find there opinions to which I adhere, and that what I am reported to have said, discursive as it is, covers much of what I should like to say to-night. It must, of course, not be forgotten that this evening I am addressing an Academy—and ever since the philosopher and his disciples walked in

the olive grove of Academe
Plato's retirement, where the Attic bird
Trills her thick-warbled notes the summer long,

the word Academy or its correlative in other tongues has carried with it the connotation of stateliness and dignity, and not alone true science—although indeed Horace bids "*Inter silvas Academi quaerere verum.*" I must be more formal in speaking to this select few than on the former occasion when addressing the many-headed multitude—noblesse oblige.

But I am sure you will not complain if you find a repetition at this time of something already said, either at the meeting of the Ontario Medical Association or at other times—I am making no pretence of originality.

You will, also, not be offended if I speak didactically and not argumentatively. "If I am to listen to the opinion of another," says Goethe, "it must be definitely expressed. Of the problematical, I have enough in myself."

The witness appears in court—what is a court?

* Read before Section of Medicine Academy of Medicine, Nov. 8, 1910

Man is a social animal; and so soon as in the course of evolution he became such, it was imperative that his conduct should be governed by rule of some kind—in short, by law. Obedience to law must needs be considered right: disobedience, wrong, a sin—for wrong and sin were at first all one, “when wild in woods the noble savage ran,” as the poet says with unconscious irony.

If a man conceived his rights to have been trenched upon, only two courses might be open. If the force of public opinion (and no civilized man can wholly appreciate the tremendous power of public opinion in a primitive community) should not prove effective to restore him to his rights or to bring about adequate compensation, he might be obliged to avenge his wrongs if he could by his own strong right hand. That is the case when

“the good old rule
Sufficeth them, the simple plan,
That they should take who have the power,
And they should keep who can.”

This is anarchy—“in those days there was no King in Israel, but every man did that which was right in his own eyes.”

The other method is the submission of the determination and enforcement of rights to some tribunal—and that tribunal under whatever name it may be known, is in substance a court.

A court is organized and sustained to enforce the law; the law is composed of such rules of conduct as the community think worth while to endeavor to compel obedience to—whether these rules of conduct come down from the forefathers or are prescribed by contemporary authority. The law is made effective by various sanctions, so that the violator shall pay in “meal or malt,” in person or pocket.

A court may be called upon but to determine the law; that is, it may be that there is no dispute as to the facts and the sole question is, “granted that the facts are so, what rights does the law give to the contending parties?” But this is a rare occurrence in any court at which a medical man is likely to appear: the cases are by far more numerous in which the real dispute is “what are the facts?” not “what is the law?”—while most cases are contested both on the law and the facts.

It is latter controversy only, *i.e.*, on facts, in which the witness plays any part.

In our system questions of law are for the judge alone; and with them the jury has nothing to do.

Questions of the fact are determined either by a judge or by a jury. In certain classes of cases these questions must be determined by a judge unless the judge directs them to be brought before the jury—in certain other classes they must be determined by a jury if either

party desires it—in most cases the determination may be by judge or jury. In this last-mentioned class, if either party wishes a jury, he serves a jury notice; but even then, the judge has the power of dispensing with the jury and trying the facts himself. Perhaps most civil cases are now tried without a jury by a judge alone. In the High Court and at the Sessions, criminal cases are tried by a jury. But whether civil or criminal, and whether tried by judge or jury, the rules are the same.

Certain matters need not be proved, *e.g.*, matters of common knowledge, that the week is seven days, the ordinary year, 365 days—that water runs down hill and smoke ascends—that persons driving when they meet should turn out to the right—and, generally, things everyone ought to know. The judge, too, takes judicial cognizance of the facts of mathematical and natural science and of the laws he is administering.

Outside of such matters and the like, at the present time the jury (I use this word to indicate not only the jury proper, but also the judge sitting to try facts as a jury) must find the facts from the evidence. Centuries ago this was not so; jurors then were taken from the neighborhood of the *locus* of the facts to be tried; and they determined the facts from their own knowledge. Now, however, the very reverse is the case; jurymen are not permitted to utilize their own knowledge at all—they must “find a verdict according to evidence”—if they have any knowledge of the facts they must, to make that knowledge available, take their place in the witness box and state the facts under oath as any other witness.

Evidence is (1) documentary; or (2) by witnesses. I need not speak of the former, but pass at once to evidence given by witnesses.

There are two classes of witnesses—the ordinary witness and the skilled or expert witness. The former is allowed to speak only of facts within his knowledge; being sometimes allowed to refresh his memory by the use of a written memorandum or entry in a book. He may not express his own belief or opinion except on some particular subjects where positive and direct testimony may be unattainable, as, for example, the identity of persons and things, the genuineness of disputed writing, whether two persons are attached to each other, and the like.

Where, however, on question of science, art or trade, persons skilled in the particular branch of science, art or trade are called upon not only to testify to facts, but also to give their opinions, they are called skilled witnesses, or more commonly “expert witnesses.” So far as their evidence is as to the existence or non-existence of facts which can be conclusively established or demonstrated, it is not generally called expert evidence—that name given to the opinions expressed by them as distinguished from the facts upon which such opinions may

be based. Indeed it is by no means uncommon for an expert witness to sit in court and hear the evidence given by others as to facts, and then give his opinion upon the facts so evidenced.

The old jibe, that "there are three kinds of liar—the liar, the d—d liar and the expert witness," had its origin and derives its vogue from this kind of expert evidence, *i.e.*, opinion evidence. And it must be conceded that most of its popularity is due to the performance of medical witnesses.

It is not wholly unjust. There is—there can be—no doubt that the extraordinary antics of some called medical experts are in many cases a disgrace to the medical profession—and that it is hard to reconcile their conduct with any other theory than that they are in the category of superlative liars—that they are worse than even "adjectives" liars.

But too much should not be made of mere differences of opinion. "Doctors differ"; but it is not Doctors of Medicine alone—Doctors of Law are quite as irreconcilable in their views; while I presume it would be hard to find two Doctors of Divinity who agree on all points. And Doctors of Medicine have much more reason—"excuse" is not the right word here—than these or those. The divine has one text-book, to whose authority all must and do bow: the facts of his science are laid down in the series of documents constituting his canon: all he has to do, is to interpret that which stands written for his guidance. And we all know the confusion every day worse confounded of the professors of the science of theology. The divisions of the Christian Church show the diversity of interpretation of the one book to which all look as the standard and binding authority. Nor can it be said that these divisions are not the result of honest thought and conviction. Collateral ancestors of my own on both sides were hanged because they refused to belong to a bishop-government church—they *knew*—the knowledge was a part of their very soul—that the Bible did not justify bishops. And while Riddle and Renwick were on the scaffold I am sure they would, had they had the power, as inflexibly have inflicted the punishment of death upon those who did not believe as they, and who tolerated a bishop as a ruler and a governor over the Church. Persecution is said to be a very easy form of virtue; but not for the persecuted. All history for centuries is full of persecution and martyrdom for opinion—the Jew persecuted the Christian when he had the power—his descendants for fifty generations have suffered violence and oppression at the hands of the disciples of the religion of love: the Roman Catholic tortured the heretic in Bohemia and Spain and England: and the heretic triumphing, revenged himself or his fellow by retaliation on the innocent fellows of his torturers: the Episcopalian persecuted the Scottish Presbyterian, the Presbyterian persecuted the Baptist in parts of New England: the

Baptist (it is said) drove out the Quaker from Rhode Island (or tried to). And if the Quaker has never persecuted anyone, it must be remembered that he has never had the power. Even in the non-Christian land,

“For the love of Him, nation hates nation so
That at His shrine, the watchful Ismalite
Guards Christian throats.”

The fate of John Hus or John Wiclif was no worse than that of Servetus, the philosophic physician and brilliant scholar, or of Campion, the enthusiastic Jesuit and pur-minded Christian. Even in our own day I am not sure that the *odium theologicum* has much decreased. It is true that there is no longer the stake or the rack, but would the spirit shown by some at least of those who have taken part in the controversy now or but lately going on disgrace Torquemada or Claverhouse?

In law, too, there is the same divergence. It is true that the lawyer has not but one collection of little pamphlets to look to for his ultimate and inexpugnable authority—but his authorities are all well known, numerous as no doubt they are. They are authorities some of which at least are binding, although some are more commentary than text. “If it is law it will be found in our books. If it is not found there, it is not law,” said Lord Chief Justice Camden. And yet it is not the common, but rather the unusual case that lawyers or judges agree. Take for an example the latest case of my own which went to the Privy Council. In the interpretation of an Ontario statute upon the subject of insurance, I decided at the trial the meaning of certain words in an Ontario Statute in a certain sense—the Court of Appeal unanimously supported that judgment—in the Supreme Court two judges thought I was right, but three thought I was wrong—the Judicial Committee of the Privy Council thought the majority of the Supreme Court wrong. In the latest case in which I have taken part in a judgment in an appellate court, the inferior court decided against the plaintiff: a Divisional Court composed of three able and careful judges gave a considered judgment reversing the decision, two of the judges being for reversal *in toto*, the third for reversal in part: in the Court of Appeal, composed of five judges, no judge could be found to agree with any of the judges in the Divisional Court. I know personally, and have sat with, all these judges, and can bear testimony, not only to their intellectual power, but also to their anxious power to find out accurately what the law is—and yet how different the conclusions. There have been cases in which the plaintiff or defendant was successful alternately in the courts on appeal, and the party ultimately successful perhaps achieved his final triumph only because there was not another court to go to.

Now these were cases in which no troublesome question of fact was involved—the facts were admitted or had been conclusively established—all that was before the courts was a question of dry law. Nor were there any such matters involved as would tend to arouse racial, religious, social or political feeling, any of which might unconsciously sway the judgment—no idol of tribe or idol of the den or idol of the market-place or idol of the theatre to blind the eyes or mislead the soul. "*Quatuor sunt genera Idolorum quae mentes humanas obsendent . . . primum genus Idola Tribus, secundum, Idola Specus, tertium Idola Fori, quartum, Idola Theatri vocentur.*" Francis Bacon himself could not in the cases I have referred to have discovered any fifth kind of Idolom to exercise its dire influence—nor could Roger Bacon have found any "*offendiculum veritatis.*"

In the world of statesmanship—of politics, the like conflict of opinion may be found.

The poet sings:

"I often think it's comical
How nature always did contrive
That every boy and every gal
That's born into this world alive
Is either a little Liberal
Or else a little Conservative."

And with the one class "All baronets are bad," while with another, "The man who bites his bread or eats his peas with a knife, I look upon as a lost creature," "the poor in the loomp is bad."

No truth is more profound or better attested than the old one, "*Tot homines, quot sententiae,*" "So many men, so many minds," or, as Terence has it, "*Tot capita, quot sensus,*" "So many heads, so many opinions," or do we prefer Cicero, "*Quot homines, tot causae?*" (No doubt a medical audience would prefer Cicero's version if he were using "*causa*" in the medical sense of "disease"—for then the remark would mean "every man has his own particular failing.")

The African king upon whom the spirituelle and sylphlike English lady had, with a most generous display of charm of body and mind, lavished her wiles, yielding to her winning ways, said: "Ah, you would be irresistible if you were only fat and black."

"*De gustibus non est disputandum.*" *Sed "neque de disgustibus,"* and I add, "*neque de opinionibus.*"

Why then expect expert witnesses to agree upon matters of opinion—whether they be practitioners of medicine or otherwise?

It is the first duty of a witness to tell the truth—the oath is "The evidence you shall give . . . shall be the truth, the whole truth and

nothing but the truth." The words of the oath are not to be taken quite in the ordinary sense. When an accused person pleads "Not guilty," this is not in law a denial of the fact that he has committed the offence charged against him; but it is only a statement to the effect, "I do not admit that I committed the offence charged: prove that I did, if you can"—so the witness is not supposed when he takes the oath to be undertaking to say all he knows—the oath paraphrased would read thus: "What you shall say to the questions put shall be true and, being true, shall neither be a concealment of anything else that is true nor a suggestion of anything else that is false." To use the accepted legal terminology—the answer shall not only be true so far as it goes, but it shall contain no *suppressio veri* and no *suggestio falsi*. For example, in a case in which an unmarried woman is suing for damages for a leg broken through the negligence of a railway company, her doctor when asked, "How did you find the plaintiff after the accident?" should not as a rule say "I found her with a broken leg and enceinte." If he left out the latter fact he would indeed not be telling "the whole truth" in the popular sense of the words, but he would in most instances be doing so in the legal sense. If, however, (for instance) the damages claimed were based in part upon her being forced to remain for a long time in her room and the condition of pregnancy contributed to this, the witness would be guilty of a *suppressio veri* were he to omit to disclose the fact. So, if the witness is asked, "After your examination of this girl, are you prepared to swear that she was not with child?" and he were to answer, "Well, I am *not* prepared to swear that," and say nothing more, he might be guilty of a gross *suggestio falsi*—he would be, if he had carefully examined her without any thought of anything of the kind, and without suspicion having been aroused, if he did not add, "but I have no reason for thinking she was," or something of the kind.

But telling the truth is not the only duty of a witness. He owes it to himself and to the truth itself not only to tell the truth, but to make the truth tell—*i.e.*, to make his evidence effective. Now by this I do not mean that a witness should take sides—the eager, the partial, witness is too often dishonest and is always discounted; and nothing is more nauseating than to see and hear a witness stretching the facts, and in the ardor of his partizanship narrowly, if at all, escaping perjury. What I mean is, telling the truth in a manner as persuasive as possible, and as likely as possible to induce belief.

Speaking in general terms, the witness is called upon only to answer questions.

I on another occasion laid down three rules which it would be wise for witness to observe; and I now repeat them:

First, "Understand thoroughly the question put, before attempting to answer it." If you do not thoroughly understand a question, have it repeated, interpreted or explained until you do. If the lawyer refuses to repeat or explain, appeal to the judge—you have your rights, and he will see to it that you are given them. If the question is ambiguous, you have the right to have the ambiguity removed. Do not, however, be hypercritical—do not dishonestly pretend not to understand a plain question because it chances to be an awkward one—nothing more prejudicially affects the value of witness' testimony than an obvious desire to fence or to spar for a time. Apply your mind honestly to the matter of the question and honestly endeavor to understand it—if the question is in reality unambiguous, do not dishonestly pretend to think it ambiguous.

Again, "Having thoroughly understood what is asked, answer it as briefly and concisely as you can, consistently with the truth without suppression of the true or suggestion of the false." If the question can be answered "yes" or "no" without some implication which is untrue, some *suppressio veri* or *suggestio falsi*, answers it "yes" or "no"; if it cannot, do not hesitate to say so. Say that an answer "yes" or "no" would convey a wrong impression; and refuse, however much pressed, to answer in a way which carries an implication of untruth. Do not heed the demand, so often made with an air of righteous indignation, for a plain answer to a plain question. It is a common thing for lawyers to insist that any leading question can be answered "yes" or "no" without any suggestion of the untrue: but try this one—"Have you quit beating your wife yet?" Many a witness has yielded to importunity and answered "yes" or "no," when in his soul he knew he should not—this is morally if not legally equivalent to perjury. But again do not be hypercritical—you will in many cases be told to answer "yes" or "no," and you will have an opportunity of explaining and amplifying later. Insist upon the opportunity, in justice to yourself and to the truth.

Remember, however, that it is the question put to you that you are to answer, not something else. Doctors are very prone to sin in this regard—called upon to testify as to facts, they indulge in opinion—asked to give an opinion of something rightly within their competence, they give an opinion upon something which is not. Time and again, I have heard doctors in cases in which insanity is set up, not remaining content with giving an opinion as to sanity in the legal sense, go on and say that the prisoner in their view should not be treated for the disease. That is not for the doctor, or, indeed, for the judge either—it is for the Parliament and the Executive.

Third, "When you have answered the question, SHUT UP." No witness is so dangerous to his own side or so much the prey of counsel on the other as the talkative witness—the heart of counsel leaps with joy when he sees his learned brother on the other side trying in the examination-in-chief to stem the flood of talk from a loquacious witness. It has been my own experience that no small portion of cases are won and lost by some witness talking too much.

Now these seem rules simple to the verge of silliness—or over the verge; but if they were observed, I am confident that the time occupied by trials would be diminished by one-third or more. Go into a court of justice and you will see witnesses failing or refusing to understand what they are asked—answering something entirely different, and talking at random long after they should have been silent.

As part of the duty to make the truth tell, the witness ought not to disregard any legitimate means of impressing the trial tribunal. For this, as well as for other reasons, he should avoid jesting and frivolity—the matter that is going on is a serious one: and there is seldom room for humor and more seldom still for wit. Few, if any, judges appreciate any wit or humor but their own; and judicial wit and humor are well known to be the lowest species of either. It is rare, too, that a jury does not form poor opinion of the joking witness.

It is said that the English-speaking people of this continent are becoming a race of jesters—and there is much truth in the charge. 'Tis true, 'tis pity; and pity 'tis 'tis true. Still the line is to be drawn when an oath is taken. If there were no other reason, there is at least this—it is seldom that wit or humor can be successful without exaggeration of fact or the use of words in a metaphorical or unusual sense—either should be absolutely tabooed in the witness box. The medical man should not complain that he is not permitted to display his wit—the law is and should be no respecter of persons, and if one man may joke, so may another, and our courts degenerate into a raree show instead of remaining a temple of justice. There is nothing which impresses a jury or a judge more than the quiet dignity of a self-respecting man—respecting himself, he is willing to respect others and he inspires respect in others. No counsel, however bumptious, can make headway against such a witness. Lord Mansfield says, "Ingenuity is one thing and simple testimony another, and plain truth needs no flowers of speech."

Nor should a witness think or pretend to think that his answers are for the information of counsel—questions which require no answer to men of education, as both lawyers and doctors are expected to be, may need to be fully answered for a common jury to understand the matter. A question is never asked—or seldom—that counsel may understand, but either for the information of the trial tribunal or to test the witness

himself. In either case a straightforward, plain answer has the best effect; and nothing is gained by indignation at an apparently unnecessary question or by omitting to answer. "You must answer any questions that are not ensnaring questions."

The language in which an answer is framed is not without importance. I do not know that we are any more given to slang than other peoples—I find as much in London and New York, in Montreal and St. Louis as in Toronto—perhaps more. But there can, it seems to me, be not much doubt that this age uses more slang than any preceding one. Slang is said to be language in the making; and, of course, much that was slang has now become good English—but in a court of justice there is no more need of using language which is in the process of manufacture than in using customs which are in the same condition and have not yet crystallized into law. One very serious objection is that until the words have become old and thoroughly incorporated in the language, one person uses or may use them in one sense, another in another. Ambiguity is always a curse, and not less so in evidence than in aught else. I am not sure, either, that the slangy doctor impresses a jury any more favorably than the jester.

There is, however, another fault into which the medical man is prone to fall—I mean the use of highly technical language. Of course medicine, like every other art and science, has its own terminology, which it is wholly natural for its professors and practitioners to use. But much of it is "caviare to the general"—whether it be of Latin origin or not, it is Greek to a jury. Much may need to be couched in technical language for reasons of delicacy, or accuracy or the like: but "bruise" is just as good as "contusion," "bleeding" as "hemorrhage," "broken arm" as "fractured humerous." Wherever an accurate impression can be conveyed by the use of common language, common language should be used—where technical nomenclature can alone give the right idea, do not hesitate to employ it.

And remember always that you are not giving a lecture upon the subject or explaining matters to professional brethren—you are stating facts to be comprehended by the laity. If you do not make the trial tribunal understand you, of what avail is all your knowledge and learning?

The appearance of a witness is not without its importance—neatness of dress, cleanliness of person, are not less pleasing in the witness-box than elsewhere. There is a philosophy of clothes, and Shakespeare knew it:

"Costly thy habit as thy purse can buy,
But not expressed in fancy: rich not gaudy;
For the apparel oft proclaims the man."

Neither fop nor sloven can impress a jury like one dressed as a gentleman—though he may have all the learning in the world, he is handicapped by his outside. "The jay" is "not more precious than the lark because its feathers are more beautiful . . . the snake more precious than the eel because its painted skin contents the eye," but, on the other hand, the wise old proverb has it, "*Vestis virum facit*," and "Through tattered clothes small vices do appear; robes and furred gowns hide all." Goethe was wise in his generation when he said,

*"Der Schein dem was ist er, das Wesen fehlt?
Das Wesen wär' es, wenn es nicht erscheine?"*

To do justice to himself, the witness should not omit to consider his physical condition. A doctor is supposed to be always in perfect condition, but there may be exceptions—I think I remember having seen some—in any case, the strain of a prolonged and strenuous cross-examination will test the strongest witness, especially if his nerves are a little on edge. A surgeon who expects to perform a critical operation will generally avoid stimulants or other "disorganizers." Does he follow the same rule when he is about to go through an ordeal as trying in some respects—in which, as in the operation, a slip may cost a life, or, if not, may at least prejudice the future?

The witness should prepare himself by reference to any notes or memoranda he may have made, by reflection on what took place, by examination of authorities to back any opinion he may have formed. Do not despise the counsel who is to cross-examine you: he may not know much about your science generally; but for the particular case he should, and if he has done his whole duty he does, know as much as you, and perhaps more. To the counsel who examines in chief be clear and accurate; but to the cross-examiner, as you value your peace of mind, be, if possible, even more so—do not fight with him, that is his business, and you cannot hurt him, though he may hurt you—be courteous and firm—don't hedge—do not make a pretence of omniscience—if you do not know a thing, do not hesitate to say so—no one will think the worse of you—be quiet, cool and dignified, and you are safe. Of course the lawyer will be irritating and will try to make you lose your temper or your self-control, but that is part of his policy—do not let that effect you. Do not joke with him even if he try to joke with you—it is not his desire to show himself friendly to you that influences him—he is after your scalp—if he can make you "play the fool with mirth and laughter," it is likely he will get something from you that you should not give. If you reply in a slang or ambiguous language, he will be apt to use the words in a different sense from that

in which you used them. If you give a plain, serious answer in good English, he can make no more of it than he in justice should.

There are many complaints about cross-examination, and some may be deserved; the privileges of cross-examining counsel have sometimes been abused, as every other right may be abused.

But let us see what cross-examination really is. It is not as so many, even some lawyers, seem to think, "examining crossly." Cross-examination is the art of searching by questions into the mind of a witness in order that the trial tribunal may see, first, what the witness really means, and second, how far what he says may be relied upon.

There are many things to be taken into consideration in determining how far a witness can be relied upon. It must be plain that it would not do to allow him to state in his own way what he desired to say and then let him go. He might forget important parts of the story, he might load it with irrelevant detail, he might speak loosely where exactness was imperatively required, he might express opinions where he was called upon to state facts, he might guess or imagine where he should know or say he knew where he only fancied, he might state as fact what he had only heard—all these dangers and many more are ever to be guarded against.

Nor would it do to allow the story to be told under the guidance of counsel for the side for which the witness was called, with nothing more. No one who hears a witness tell his story under the hands of a skilful direct examiner (and direct examination is to my mind a more difficult art than cross-examination, and it is rarer to find a first class direct examiner than a cross-examiner who deserves the same praise), but must be struck by the beauty and symmetry of the structure built up, and almost grieve to see it fall in pieces before counsel on the other side. Some way of testing the accuracy of evidence must be provided—and no means yet discovered can compare for a moment with cross-examination. No doubt injustice will sometimes result both to the witness and to the side for whom he is called, but in the vast majority of cases the evidence of the honest witness is not weakened, but it is strengthened by a rigorous and searching cross-examination—while the evidence of dishonest or incompetent witnesses is in numberless cases weakened or destroyed. "None but the sore feel the probe."

Nor is it only the dishonest witness whose evidence needs probing. The value of the evidence of a witness may and often does depend on much more than his honesty. There is first to be considered the witness' opportunity of knowing the facts. He may have been in the immediate presence of the actors or a distance away; he may have made a careful or a merely cursory observation or examination; it may

have been clear daylight or the gloom of night—and other circumstances may have to be considered in this view.

Then his capacity of understanding what he did observe—see or hear or feel—or his capacity to form an opinion of any value. His general intelligence, his education, his training, are all of importance in this enquiry.

Again, in observing fact or forming opinion, is he consciously or unconsciously swayed or influenced by social or moral, religious, political or racial prepossession or prejudice? The common impression amongst sellers of liquor is that no strong temperance man or prohibitionist can, in cases of alleged illegal sale of intoxicants, see things as they really are. I do not say that this is true, but it will illustrate my meaning.

Has the witness any pecuniary interest, or interest of any kind, direct or indirect?

Then what kind of a memory has he? Does he in fact remember what he says he remembers? Has he the reproductive and representative faculties of the mind so well developed and in such good condition that he can call to mind what did actually happen? Or is he only indulging in fancy and imagination?

And is he really expressing his thoughts by the language he is employing? It may seem an extraordinary statement to make, but it is undoubtedly true that not one man in twenty appreciates the value of an accurate use of language, and not one man in twenty can express precisely what he means so as to exclude the possibility of mistake.

Most important of all is honesty. I am glad to say as a general rule medical witnesses are honest. Any witness who will give evidence contrary to the fact as he understands it or contrary to his real opinion, either to help a plaintiff to obtain a verdict when he should not, or a larger verdict than he should or to help a defendant to escape the legitimate consequences of wrong doing is a thief; he is a criminal and should just as truly be behind the bars as the man who opens the vaults of a bank with dynamite. Expert witnesses will sometimes give testimony which is certainly a tissue of lies—no doubt were they prosecuted for perjury, they would shelter themselves behind the plea that they were giving an opinion only and not swearing to a fact—thus ignoring the truth that the existence or non-existence of an opinion is itself a fact. Perhaps the most striking and most shocking examples of this are in criminal cases where the defence of insanity is set up—the mention of such cases gives me a bad taste in the mouth, and I say no more.

And just here let me refer to something which is not uncommon—I mean exaggeration—which is a form of lying. If you do not believe it, read "Opie on Lying." Many witnesses appear to think

that the trial tribunal will probably strike an average of the professional opinions given—they consequently exaggerate their own so that it may have the greater weight.

Some, too, do not seem to place any value on language, and while there is in their terminology a distinction between "yes" and "no," words of a less definite and fixed value are not distinguished. There is a difference between black and white, but dark-grey is with them one or the other, depending sometimes, and too often, upon the side which calls them.

Sometimes there is apparently an attempt to take advantage of the supposed ignorance of judge or jury. For example, I have heard a medical man (who should be an expert) solemnly swear that anyone who believed in the possibility of communication with the spirit world was necessarily insane and incapable of managing his affairs. It was useless to refer him to intellectual giants from Socrates to Sir William Crookes and Sir Oliver Lodge or to business men like Stead—he stubbornly held to his opinion—or what he said was his opinion.

Such evidence as this is wholly harmful and improper—to use no stronger words.

Now, cross-examination is directed to the sifting of the evidence given so as to find (as has been already said) what the witness really means and how far what he says and means may be relied upon. Medical men should not complain that they are subjected to the same treatment as other witnesses. There are numberless cases in which not only straight perjury, but also concealment of the truth and false suggestions have been made plain by cross-examination, and cases are not unknown in which medical men of apparently the highest standing are shown to have permitted themselves to express opinions wholly opposed to the well-recognized facts of their profession—opinions which no competent medical man could possibly entertain.

And as the court is either conducting what should be a stern and careful investigation into an alleged offence against the people or is engaged in a civil case in what is the civilized substitute for a physical and personal combat between the contestants, and as each counsel is upon honor to do all he legitimately can for his client, no witness can ask that cross-examination shall be but trivial and not a trying ordeal. Lord Bramwell said, "It is well for the sake of truth that there should be a wholesome dread of cross-examination." I agree with him: this dread of cross-examination must undoubtedly tend to a greater care in the giving of evidence on the direct examination: and tend in general to make such evidence of greater value.

In much of what I have said, I have not distinguished between the doctor as an ordinary and as an expert witness. There is, how-

ever, one consideration in the latter case which perhaps deserves a word. The scandalous exhibitions of irreconcilable differences of expert opinion have called forth many comments: and it has been suggested that some remedy may be found. For example, I copy the following from a thoughtful article in a daily newspaper:

“EXPERT TESTIMONY.”

“There is some danger that the medical profession will be discredited by the competition for expert witnesses in damage suits and criminal cases before the courts. In some instances the witnesses seem to become advocates for one side or the other, and the conflict of opinion does not tend to confidence either in the courts or in the profession. Is it impossible to have a physician or a board of physicians of high standing appointed by the Crown or retain as crown counsel are retained in criminal cases? If this is practicable (and there may be many objections which we have not considered), the evidence of such experts would be available alike for prosecution and defence. Judge and juries would have reports in which they could repose a greater degree of confidence, and in many cases perhaps a sounder administration of justice would be assured.”

In certain criminal cases this is now the practice in Ontario. Whenever a crime is thought to have been committed and the accused is in custody—if there be any room to suspect his sanity, or if it be suggested that his defence may be insanity, two experienced alienists in the employ of the Ontario Government are sent to examine and report—these are no advocates, and their whole duty is to determine the exact fact. They are at the disposal of the defence, as well as of the prosecution, and in my experience they have been sometimes called for the defence. So, too, in cases of suspected poisoning, there is an analysis made at the instance of the Crown. No one has ever challenged the absolute honesty and fairness of the present analyst—his evidence is at the disposal of the defence, in the same way as that of the alienist.

But even in these cases, neither party is bound to accept as conclusive the evidence offered by these experts. Others may be, and often are, called; and I should consider it a most dangerous practice to hold any person bound by the opinion of any expert, however able and honest. In matters of insanity, *e.g.*, men of equal ability, skill, experience and honesty may and often do entertain different opinions—while even in matters of chemical science, it should not be forgotten that a most careful, conscientious and capable chemist was forced to admit that arsenic he found upon his analysis came from his own reagents. Science is constantly advancing: and it may well happen in

the future as it has hapened in the past that the official expert falls behind the younger and non-official enquirer. Even in matters of law, the people are not, and should not be, satisfied with one expert—a trial Judge finds his opinion appeals against to a Divisional Court—the judgment of that Court is reviewed by the Court of Appeal; and it may be, the Supreme Court of Canada and the Judicial Committee of the Privy Council are ultimately required to determine what is the law. Law, too, as we have seen, is a science in which the theory is that somewhere in the books, if diligently sought for, will be found a decision or a principle which will conclude the case under consideration. How much more then should a litigant or an accused be at liberty to contest the opinion of an expert in a science which is living and ever growing—in which discoveries are being made yearly—I had almost said daily and hourly?

It must be, then, that other than the official experts may be called: and this should, as it seems to me, be fatal to any idea of an official, individual or collective, being appointed as a standing referee upon scientific question. In all but the exceptional cases mentioned, each party must under our practice procure his own experts: and while it cannot be said to be wholly satisfactory, I have not yet seen any scheme proposed which is at all feasible.

But we do not expect any human institution to be without faults; and Courts are human. The Judge may never have known or may have forgotten some principle of law—an old Judge said: "God forbid that an attorney or even a Judge shall be considered to know all the law." The jury may be swayed by sympathy or prejudice, or may be unintelligent or misled, and may perversely find a verdict not according to the evidence: and it is too much to expect that any such method of giving any kind of evidence, expert or otherwise, will be perfect. "No system of judicature can be devised or suggested in which occasionally failure to insure complete justice may not arise."

So much had been written when I was favored with the perusal of the address of your President, given on October 4th of the present year; out of courtesy to him, it would seem proper that I should say a word or two in respect of his remarks. He says:

"The position of the medical (so-called) expert witness in our courts of justice has always appeared to me to be an anomalous one, brought about partly by the practice of allowing lawyers to cross-examine in such a way that it is hard for any but the most astute to avoid giving a wrong impression and partly by the practice of taking sides. For doctors to enter the witness-box and testify to one opinion for a fee, whilst others swear to an opposite opinion for a larger fee, is not

in the best interests of the profession, and is hard to reconcile with the best interests in the course of justice.

"I have long held the opinion and still hope that the so-called medical expert will be abolished and the medical advisers will be employed by the Crown instead. In that way his position would not be in any way that of an advocate for either one side or the other, but would be entirely judicial, and his whole object would be to help the presiding judge to a correct understanding of the intricate medical problems presented. I believe that in this way the real cause of justice would be furthered."

With great respect for anything Dr. Macdonald could say, it seems to me that he has fallen into errors which, considering his point of view, are not wholly unnatural. He says that the position of the medical (so-called) expert witness is an anomalous one. This is incorrect—his position, so far from being anomalous, is entirely normal; and it is the same as that of an expert witness in any other art or science, chemistry, mechanics, electricity, painting, veterinary, surgery, dress-making, even law itself—that is foreign law, the Judge is himself an expert in his own law—and if a medical adviser is to be appointed, why not a chemical, mechanical, veterinary and artistic expert? As to helping the presiding judge to a correct understanding of the intricate medical problems presented, I deny that there are such problems. At the peril of being considered guilty of *lèse majesté* against Queen Medicine, I assert that there are no intricate medical problems ever presented to the courts or any medical problems at all which cannot be understood by a judge of ordinary intelligence and education. Medicine, my friends, has passed the stage of mystery and occultism—it is now a science of common sense, and there are no arcana sacred from the intrusion of the layman. No priest of the cult can cry "*Procul, o procul este, profani,*" nor may two augurs meet and join in smiling congratulation while each whispers "*Odi profanum vulgus et arceo.*"

How is the expert to be appointed? By the Crown? That means by the Government for the time being. In our system of party government, is the best man always appointed? Is the Deputy Minister of Justice, or the permanent adviser of any Minister, always at the head of his profession? Are the members of the medical profession themselves in all cases perfectly satisfied with and content to be bound by the evidence given by some who are frequently called as witnesses by the Crown.

Or are the experts to be appointed by the judge? I know of judges who would always feel disposed to appoint a Homoeopath—others to whom Hahnemann is anathema; one of my own old perceptors

was an Eclectic, and had an exalted opinion of the virtues of Thompson's No. 6.

Or are they to be elected by their brethern? You have now a Council elected: and it seems to me that I have somewhere heard that it is possible some of the electors were not wholly satisfied with their representatives there. Indeed, if I am not under a mistake, some have even gone so far as to speak out in no uncertain tones their thorough dissatisfaction.

The reprobation of the practice of cross-examination, I have already alluded to—the medical man must altogether repudiate any idea that he is a Judge in a Court of Justice; and he must submit to having his views challenged and all reasonable tests applied to determine the real value of his evidence. Is the ignorant quack to be spared exposure of his ignorance and pretension just because he has the letters "M.D." after his name? And who without cross-examination knows but you are as ignorant as he? He will be as pompous and impressive as you can be. Who can tell your worth till he tries?

Courts exist not for the witness any more than for the lawyer or judge, but for the litigant—and it is the interest of the litigant alone which is to be considered—his interest is the interest of the people who pay for the courts.

Medical men must face the situation—so good a friend of the profession as I, may be pardoned a little plain speaking. A great deal of the odium attaching to the expert medical testimony is due to natural difference of opinion and is consequently unjust: most of it is not. For the most part it is due to medical men themselves, and the remedy (so far as any remedy is possible) is in the hands of the medical men also. The trouble in the main arises from two causes. First, downright ignorance. The very high standard of professional attainment reached by the practitioners of medicine in our Province is well known, and I am proud of it, as everyone should be: but it must be admitted that there are exceptions. Some there are who cease to be students the day they pass the Council; some who during their course in college are satisfied with the minimum required to pass the examinations. They are, and they remain ignorant. Again, and it pains one who respects and esteems the medical profession as I do, to say it—there is often absolute dishonesty in the medical as in every other kind of expert. Your president has been drinking of the waters of sweetness when he said, "For doctors to enter the witness-box and testify to one opinion for a fee, whilst others swear to an opposite opinion for a larger fee, is not in the best interests of the profession, and is hard to reconcile with the best interests in the cause of justice" (unless, indeed, Dr. Macdonald was speaking of honest and well-considered differences of

opinion). If these "opinions" were dishonest, the doctors were perjurers—if formed without careful consideration, they were pretenders—in either case a disgrace to the profession. If the opinions were honest and well-considered, how determine which was right? And how remedy the difficulty? By leaving it to another expert equally fallible? Let medical witnesses be masters, as they should be, of their science, and practice plain, simple honesty; and most of the scandal will disappear.

But as I have already said, difference of opinion must be expected. Medicine is not mathematics, not an exact science—and it is not and never can be a matter in which authority is supreme.

There is no prospect of medicine becoming anything like an exact science until—and unless—experiment be permissible upon the human frame. This cannot be done now—the doctor treats, he does not experiment, he is in duty bound to do the very best for that particular patient, not for medical science generally.

Nor can, or should, medicine become a matter of authority. Hippocrates was a radical in his day, and doubtless shocked the schoolmen of the Aesculapian College. Celsus was no better; and Sydenham on Fevers was revolutionary. Paracelsus and Van Helmont were not simply quacks*. Ambrose Paré and Harvey and Jenner and Simpson were all heretics. The physician who, a hundred years ago, would reprobate bleeding freely and for practically every mortal ill, would be scouted as an ignorant and presumptuous pretender.

We must, I think, "Rather bear the ills we have, than fly to others that we know not of"—and be content with our present system till we can get a better.

What is the remedy? The judge may become more diligent and make more careful enquiry into his authorities—the jury may cast out all feeling of sympathy, prepossession and prejudice, and all else than a real desire to do justice according to the evidence: and the expert witness, I think, can help by being always, not only learned, but also independent, impartial—in a word, honest. But even then, I repeat once more, opinions must be expected to differ.

I could go on by the hour addressing you upon this subject, but I have been already too long and must now stop.

In conclusion, let me wish the Academy all success, and let me venture to hope that none of its members will bring disgrace upon it, himself and his profession by dishonest or slipshod testimony. If the aristocracy of the profession are beyond reproach, the commonalty will follow in their footsteps, and the profession at large be freed from a reproach not wholly deserved, but having but too well established grounds for existence.

An exceedingly hearty vote of thanks was passed by all the Fellows present, moved by Dr. N. A. Powell and seconded by Dr. A. A. Macdonald.

Mr. Justice Riddell, in replying, said in part:

"I have entirely failed in one chief object of my address to-night if I have not made clear that the members of the medical profession must take hold of this matter of expert evidence themselves.

"The Judges cannot help you, they are bound by precedent; the lawyers will not, they have their amount in the disagreement of experts; the legislature cannot be expected to give medical men as witnesses a position different from or superior to that of any other class of the community.

Now, while there are, of course, black sheep in the medical as in every other profession, their number is not great; and with the exception of these few, I am confident and enlightened regard for truth, for the good of the public and of the profession, must be all-powerful. Even the black sheep have some regard for their general repute among their brethren. If they knew that a doctor who gave a dishonest opinion would be shunned and scorned like any other perjurer even their conduct would be more nearly honest.

"There is no reason why medical experts should not stand at the very head of all expert witnesses, as they ought, instead of being as they are, at the very foot. And I am not entirely without hope that the day is not distant when such will be the case. If anything I have said will help, in however small a degree, to speed that day, I shall feel amply repaid."

NOTE.*

Let me explain what I mean.

Paracelsus had a vulnerary ointment or weapon-salve made after this recipe: "Take of usnia (*i.e.*, the mossy growth upon the weathered skull of a criminal, who had been hanged and left hanging in the air), of real mummy, of human blood still warm, of each one ounce; of human suet, two ounces; of linseed oil, turpentine and Armenian bole (*i.e.*, a kind of clay found native in Armenia, an impure silicate of aluminium containing considerable oxide of iron), of each two drachms. Mix all well in a mortar, and keep the salve in an oblong narrow urn."

Van Helmont and others had different formula, using the fat of bears, bulls or wild boars, powdered earthworms and other like delectable materials.

A wound was treated by anointing the weapon which caused the wound, or if that was not available a splinter dipped in the patient's blood, with this ointment; and the weapon or splinter was then laid away in a cool place.

In the meantime, the wound was to be carefully washed with fairly clean water, covered with a clean, soft, linen cloth, and cleansed once a day from pus and other impurities.

The theory given out was that the dead criminal or animal died full of secret reluctance and vindictive murmurs and with a high flame of revengeful feeling. This continued after his death, and the posthumous character of revenge remained firmly impressed upon the blood and fat in the unguent. The moment the blood on the weapon or splinter came in contact with this most malignant substance, it was roused to active excitement, and so obtained full power to cure its fellow blood left behind in the wounded man; and this it did by sucking out the dolorous and exotic impression from the wound.

I do not believe that Paracelsus really held any such theory; but mysticism was the fashion of the time, just as giants were the fashion in literature, when that other great physician, Rabelais, wrote, and so, of course, Rabelais had to write about giants in that astounding book abounding in pearls of wisdom, unfortunately, however, to be sought for in a bucketful of filth. Patients then required magic as they still require medicine. Then a wounded man would have been as much disappointed and dissatisfied by simply having his wound washed as a typhoid patient would now be without something to take besides care. Placebos have and always had their place, in your science.

If any one desires to know the treatment of wound, *secundum artem*, at that period, let him read the story of John Ridd in Blackmore's "Lorna Doone."

Until Lister's time, no better treatment for wounds was ever known than that of Paracelsus and his imitators; and they knew and recognized the value of impressing the imagination. They were called "quacks," and were subjected to the ridicule of the regular profession—so was Sir Kenelm Digby in England, who cured wounds in much the same way. He took any article which had been dipped in the wounded man's blood and put it in a solution of a powder of vitriol—"powder of sympathy" he called it—and directed the patient to throw away all plasters from his wound, only to keep the wound clean and at moderate temperature betwixt heat and cold.

Had the patient died under the treatment of Paracelsus or Digby, the Royal Physicians and Surgeons and practically the whole profession would have given entirely honest evidence that he died from *mala praxis*.

If a patient were to-day treated as practically all surgeons of that day treated theirs, and died, his medical attendant could not escape conviction for manslaughter, let alone have a defence to a civil action for damages.

CHAIRMAN'S REMARKS, PATHOLOGICAL SECTION OF
THE ACADEMY OF MEDICINE, TORONTO

By R. D. RUDOLF, M.D., F.R.C.S.

LADIES and Gentlemen,—I see that the first item on our programme this evening is "Chairman's remarks," but you need not fear that I am going to inflict any lengthy discourse upon you. The meetings of our Section are too few and the material at our service too abundant to allow of any such dissipation.

I must first, however, thank you for the honour you have done me in placing me in the Chair for the Session of 1910-11. It might be thought that I, as a clinician and therapist, was rather out of place in such a position; but I hope the very fact of placing me here is evidence that the Members of the Section of Pathology fully appreciate the value of closely linking pathological findings with the symptoms and signs, through which the diseased conditions make themselves evident. To my mind the close connecting of the physical signs and symptoms with the *post mortem* or laboratory findings cannot be too much emphasized. This seems to be such a self-evident point that it seems scarcely worth while mentioning it, and yet is it not all too common to see pathological material shown at pathological meetings merely as good specimens with little or no reference to what the condition was during life?

It always seems to me that specimens thus shown are about as useful and edifying as is the answer to a riddle where one has not heard the question. Before a *post mortem* examination is made it is all important to have as complete notes as possible of the condition during life. Further, many physical signs may be elicited upon the *cadaver*, which may be immediately explained by the physical condition found by the pathologist. The position and size of the stomach, heart and many other organs can be thus determined and then checked. The Professor of Medicine in the University of Toronto has recently established a class in which the clinician gives the clinical findings and the pathologist the *post mortem* ones. The student will thus learn to think in pathological terms, and will not diagnose, say an aortic systolic murmur, but will, when hearing such a bruit, think of the structural changes which are the cause of such abnormal sound.

With rare exceptions, I would like to see pathological specimens unaccompanied by notes of the findings during life, barred from our already crowded programmes.

Another point that I should like to mention is the great value of pathological findings that can be carried out during life as compared with *post mortem* results. The first often leads to correct diagnosis

and subsequent rational treatment, while the latter naturally reveals only a state of things which was incompatible with life.

A *post mortem* room habitu , although a very well informed person, is rather apt to be a cynic as regards the results of disease. I have never intimately known the head of a jail, but fancy that he would from dire experience tend to take a very depressed view of the morals of the community, and in the same way the pathologist who confines his work to autopsies, views disease, or rather diseased persons through gloomy glasses. His experience of typhoid is limited to fatal cases, and hence, when he wanders into the wards and sees a case of this most hopeful disease, a mental picture of deep intestinal ulceration, or even perforation, etc., etc., may too easily arise in his mind. In much the same way I always think that the wards of a hospital are apt to make men cynical as regards the natural history of diseased conditions, as so many of the cases there seen are so far advanced as often to leave few steps between them and the pathologist. This is especially true with regard to chronic affections. It is in private and out-patient practice that the clinician sees the beginnings of disease—the slight fluctuations from the normal called health, and which may so often, by a little timely advice and treatment, be checked or averted.

In order to appreciate the abnormal one must have a full knowledge of the normal, and as pathology deals with the abnormal structure and functions of the body it calls for a good knowledge of anatomy and physiology. On the other hand, many of the most important facts in physiology have been revealed by the study of disease. Take, for example, the flood of light that the work of Kocher, of Berne and W. Ord, of London, threw upon the functions of this for-long-thought superfluous organ—the thyroid gland. And Nature is constantly conducting experiments in the body upon a scale and over periods of time that the physiologist may more envy than imitate.

One point as regards the work in the Section and I have done. In former years it has sometimes happened that the autopsy reports, which are of the greatest value, especially when accompanied by clinical notes, have occupied too much of the evening, so that some paper which may be of great importance and indeed may be the chief attraction on the programme, is crowded and perhaps thus partially spoiled. We will try to avoid this crowding by putting upon the programme the time at which the different items will take place. Thus if a paper is advertised to begin at 9.30, when we reach that hour we will stop the autopsy reports and go on with the arranged programme. Probably the best discussions are the informal ones, and we will continue in the way that Dr. Goldie, our first Chairman, introduced.

The meetings of all Sections of the Academy are supposed to commence at 8.30 and we will keep to the letter of this law.

PAPILLOMA OF THE APPENDIX.

By ERNEST A. HALL, M.D., C.M., Vancouver, B.C.

THE pathological potentiality of the appendix is apparently not yet exhausted. British Columbia has produced an appendix flora of everything between pins and pin-worms, stopping not to "grapple with the seed of grape or apple or solder button swallowed with our pie," but rarely if ever, (owing to a keen appreciation of early symptoms) "ending in mansions in the sky."

The specimen here represented is a Prince Rupert development, the patient having been referred to me by Dr. McNeill of that city. She had an attack of "inflammation" some three years ago, followed by an abscess that was opened through the cul-de-sac. Since that time she complained of pelvic distress. Retroversion, adhesions and the proximal part of the appendix with a papilloma growing from within projecting into the caecum were present. The appendix had evidently been the cause of the original attack. Nature in her bungling methods to further human evolution, had infected the pelvic in her attempt to remove the *effete* organ, and then had only removed the distal portion.

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THE EHRLICH-HATA REMEDY "606."

In this issue we give many selected articles dealing with this new remedy for syphilis. The articles are calculated to give the expressed opinions of those who have had extensive experience with this powerful mixture. They will be found to contain all that has been said upon the subject up to date.

THE "606 FEVER."

Dr. A. Pulido Martin, in an article in the *Siglo Medico*, of Madrid, Sept. 10, makes some caustic and seemingly injudicious comments on the Ehrlich-Hata preparation for syphilis. He says that he is amazed at the extraordinary advertising that a patented remedy is now receiving—the exclusive property of a single manufacturing firm—and warns physicians not to catch this "606 fever," and to go slow in forming their judgments, as there is commercial money-making involved. "The

daily papers," he says, "at Hamburg, Cologne, Vienna and especially at Frankfort, the latter inspired directly by Ehrlich, are publishing columns on the subject but without much scientific value. They add another cipher when they mention the number of cases in which the new drug has been applied; they relate how a Hungarian physician hurried to Frankfort and obtained the details of the manufacture of the drug from Ehrlich and then returned to Budapest and announced the organization of a society to produce the new drug; this was then followed by reports of Ehrlich indignation at this news and his assertion that the drug is the property of a certain firm of manufacturing chemists and that the Hungarian physician could not possibly have learned the full details of its preparation as he, Ehrlich, related them only in a general way, and, besides this, he modified the substance since, making it less toxic so that it can be injected in larger doses, the new substance being called by a new name, Hyperideal; this statement is followed by the declaration that the 'Hyi' is not to be put on the market, and is not distinct from the original '606' (to avoid spoiling the sale of the latter), but it is destined solely for use in his own service, etc., etc." "From the many reports that have appeared on the subject it is evident that the '606, or 'Hyperideal,' or whatever other name it may bear by the time these words are published, does not keep well, the injection is painful, and the fever and other signs of a reaction compel vigilant oversight for a few days. Other authors have reported that the injection of '606' was followed by the death of a patient, but the daily papers, commenting on these fatalities, speak of the authors reporting them as enemies of German science and state that these experiences are negligible as the patients were on the point of dying anyway." He adds in conclusion, "It must not be forgotten that other arsenical remedies, used even for syphilis, which at first were regarded as harmless, later proved to have a decidedly toxic action on remote organs, such as atrophy of the optic nerve under atoxyl treatment. Neither must it be forgotten that, while it has not yet been proved beyond question that a therapeutic problem has at last been solved, there cannot be the slightest doubt in respect to the business end of the '606' matter." Bearing all these things in mind, he urges his readers to restrain their first impulse of enthusiasm as not fully justified up to the present.—*J. A. M. A.*, 1 Oct.

NOTE.—The experiences of the other writers quoted in this series do not coincide with the foregoing.—Editor CANADA LANCET.

PREPARATION "606."

In the *Medical Press*, of November 4, there is a letter from Berlin containing some interesting experiences with Ehrlich-Hata "606." Dr.

Dobrowitz has given 100 injections. There was some pain and slight rises of temperature. An abscess formed in two cases, the pus containing arsenic. In four instances there was an erythema. There was a remarkable effect on all syphilitic lesions. Dr. Fareno had treated 150 cases. Except in parasyphilitic disease and malaria the results were excellent, especially in the malignant forms of syphilis. In forms of the disease that had resisted other methods of treatment the effects are said to have been "astonishing." In three malignant cases there were relapses which were cured by a second injection. Dr. W. Scholtz has treated 90 cases at Königsberg. He confirms what has been said about the remedy. In the ulcerous forms of tertiary syphilis the effect of the remedy is excellent. The spirochaetes disappeared in about three days. There were three cases of failure, likely due to a strain of spirochaetes resistant to arsenic. Dr. Hermann Schlesinger reports a number of transitory but unpleasant symptoms as occurring in his experience. The curative effects of the treatment, however, were very gratifying. Dr. Schreiber, of Mogdeburg, found the remedy valuable in tabs. The gastric crises disappeared in two, potency returned in one. The Wassermann reaction became negative in 50 per cent. of the cases after one injection.

REPORTS ON EHRLICH'S "606."

McDonagh, *Lancet*, 3 Sept., reports twenty cases treated with intramuscular injection of dioxydiamidoarsenobenzol. He remarks that the earlier the syphilis the larger the dose required (from 0.45 to 0.6 gramme), and that 0.3 gramme is ample in the late stages. In almost every case an induration can be felt in both buttocks, probably due to a fibrosis caused by the caustic action of the sodium hydrate; whether the induration will ever disappear time will only show; at any rate, it causes the patient no inconvenience. Beyond the improvement observed by the naked eye, he was very much struck by the extraordinary change for the better in almost every patient's general condition; they not only appeared brighter, but felt ever so much better and put on weight; this alone is a great achievement, since there is scarcely a patient that does not become depressed, anæmic, and lose weight under mercurial treatment. McDonagh also states that the greatest proof we have of the nontoxicity of this drug is the fact that healthy animals behave quite indifferently to an injection, and that it requires 0.1 gramme per kilo to kill an animal, which would in a man be equivalent to about 7 grammes; this being the case we shall no doubt hear of larger doses being used with impunity. McIntosh reports the result of

laboratory experiments. In the experiments rats were used in every instance, and the weight of the animals employed was in each case as near 100 grammes as possible. As a general rule 0.005 gramme of "606" for a rat of 100 grammes (i. e., 0.05 gramme per kilogramme or animal) was found to be the most suitable amount as a curative dose; with this quantity no bad effects were observed. The medicament was always given subcutaneously after it was made up in the manner advised by Alt. The required amount, 0.005 gramme, is weighed and transferred to a test tube; a few drops of methyl alcohol are added to dissolve the preparation and then 1 c.c. of normal saline solution. The solution which is strongly acid, is neutralized with a normal solution of sodium hydrate; a slight excess of sodium hydrate is then added till the precipitate which has been formed is nearly all dissolved. The resulting slightly opaque solution is now ready for use. Another experiment suggests that a slight general infection which is not apparent to the microscope does occur when syphilis virus is given at the same time as the dioxidiamidoarsenobenzol. This infection must, however, be very slight, as twenty-four hours later the blood is not infectious. The destruction of the spirochætæ by the specific is therefore not complete till more than twenty-four hours afterward. This result is certainly much better than what has been achieved by any of the other chemotherapeutic substances in protozoal infections. Previously to the discovery of "606," atoxyl was considered to be the most efficient remedy for the spirillosis of fowls; yet, after a curative dose of atoxyl in that infection, spirochætæ can be demonstrated in the blood for three days. Rats which have received an injection of "606" at the same time as the virus are found to have developed a complete immunity to the disease. Of several rats thus treated, or one might say vaccinated, only one was found to have become immune to a reinoculation. Owing to the insolubility of dioxidiamidoarsenobenzol, except in a great excess of fluid or in a medium which is alkaline, an accurate estimation of its destructive power on the parasites is impossible. In dilutions of 1 in 500 it appears to have very little injurious effect on the spirochætæ, a result which merely supports the older fact that the antiseptic or bactericidal properties of a substance are no indication of its healing properties. The high curative properties of dioxidiamidoarsenobenzol and its feeble action *in vitro* suggest that in all probability some change in its composition is brought about by the intermediary of the animal organism, such as happens in the case of atoxyl. The discovery of the actual mechanism by which the parasites are destroyed by "606" is a problem which would be rather difficult to solve. In the clearance of the spirochætæ from the organism there are evidently two processes at work, namely, a direct destruction of the parasites and an increased

phagocytosis. The latter is known to be the process principally involved in the production of a natural cure by a crisis, and an injection of dioxo-diamidoarsenobenzol is followed by a considerable degree of leucocytosis, which suggests that phagocytosis also plays an important part in the production of the artificial crisis. What part the elaboration of antibodies plays in the latter it is impossible to say. The chance of any toxic effects occurring in the employment of a therapeutic dose of "606" is extremely remote, as from the foregoing experiments, as well as from Hata's, it is seen that the *dosis maxima bene tolerata* is six times as great as the *dosis curativa*; while the fact that one dose alone is required to effect a complete cure in most spirochætæ infections eliminates the possibility of toxic results from accumulation or from excessive sensibility.—*N. Y. Medical Journ.*, 24 Sept.

TREATMENT OF SYPHILIS WITH EHRLICH-HATA'S PREPARATION ("606").

Pick, *Wiener Klin. Woch.*, 18 Aug., gives in detail his observations on the effect produced by "606" in cases of primary syphilis before and after the outbreak of the exanthem of secondary syphilis, including ten patients who still manifest scleroses, of malignant syphilis, of late syphilis, including gummatous osteopriostitis and other gummata, of hereditary syphilis, and of syphilis of the nervous system. He noticed recurrence in two cases, one of malignant, the other of primary syphilis. In regard to the behavior of the Wassermann reaction he refers to the results obtained by Epstein, which will be published in full elsewhere. The change of positive reaction to negative took place in most cases after four weeks. The shortest interval between the positive and the negative reaction was twelve days, the longest yet observed seven weeks. A change from a negative to a positive has not yet been observed even in those cases in which there was a recurrence of the symptoms, or in which the symptoms did not wholly disappear. In the patient with primary syphilis who were treated preventatively no secondary symptoms developed and maintained a negative reaction, the longest period of observation being twelve weeks. He has not observed any such bad after effects as those described by Bohac and Sobotka, which might possibly be explained by a direct injury to the sciatic plexus. The fever following the injection reached the height of 39.8 C. in only one case. An erythema frequently appeared at the place of injection, and Herxheimer's reaction was frequently demonstrable in secondary syphilis. A symptom very often observed for from four to six days after the injection was a diminution in the quantity of the urine, which

fell in some cases to from 400 to 500 cm. daily, while its specific gravity ranged from 1,015 to 1,020. The symptoms might be ascribed to a reduction of the secretion, as it occurred in the cases in which the injection was followed by a profuse perspiration while the patients lost appetite and complained of thirst. The pulse in these cases ran from 90 to 108. The symptoms were not threatening. In résumé he says that this preparation develops a specific action such as has never been seen before in the treatment of syphilis. The quickness and promptness of its action, exhibited wonderfully upon gummata, recall the action of quinine in malaria. Recurrence and the incomplete healing of certain forms with the small doses at present used derogate in no way from this wonderful action. The principal indications for the remedy are malignant syphilis, the obstinate affections of the mucous membranes, and preventive treatment. It has won its place in the treatment of syphilis, even if we are not ready to dispense with mercury.—*N. Y. Med. Journ.*, 24 Sept.

EHRLICH'S "606" IN SYPHILIS.

Spiethoff, *Münch. Med. Woch.*, 3 Aug., states that his experience with 50 cases were all favorable although the reaction of the drug was rather severe in a number of the patients. In one case, a man of 31 with secondary syphilis, stupor and positive Wassermann reaction had an attack of convulsions resembling an epileptic seizure 4 hours after injection of 0.3 gm. of the "606," with abolition of the corneal reflex and exaggeration of the knee-jerk. There was no history of epilepsy in this case but at the age of 14 he had a period of psychic disturbances similar to the stupor observed before the injection. Spiethoff had a similar experience with a psychosis developing in a patient during a course of treatment with arsacetin—in these cases the brain was evidently the point of less resistance. In 2 cases he observed sudden total blindness for a few minutes; one in a tabetic 50 hours after the injection of the "606." In the second case and otherwise healthy syphilitic reported sudden blindness in the right eye and ptosis of the lid, the whole lasting for 10 minutes and coming on 8 weeks after the injection. In a few other cases scotoma was noted on the day of injection. But in all these cases the eye disturbances were briefly transient and never alarming. Tachycardia was also observed in a few cases but subsided if the patients lay down. The treatment had an unfavorable action in the case of an anemic woman of 28, who was very poorly nourished, and had tertiary lesions of the throat. Three years before she had been treated with ataraxine the same lesions. An injection of 0.5 gm.

of the "606" was made in the afternoon, followed in the evening with 0.01 gm. of morphin. The patient was found dead in bed the next morning. Autopsy showed cicatricial stenosis of the throat and healed gummas in the liver, with hypoplasia of the heart and aorta, but no signs of arsenic intoxication could be detected. Ehrlich attributes the death in this case to shock from the local painfulness at the site of injection. Duhot reports an experience similar to that of Taege's, summarized in these columns September 24, page 1154. The infant was transformed under the influence of "606" taken by the mother nursing it. Ehrlich discusses the mode of application of the "606," stating that he had records of 300 cases in which it was given intravenously, while in 3 fatalities of which he knows the route was different in each case, intravenous in Grouven's case, subcutaneous and intramuscular in the others. It is possible, he adds, that first an intravenous, followed in 48 hours with an intramuscular injection, thus dividing up the amount, may prove the preferable technic.—*J. A. M. A.*, 8 Oct.

"606."

In order to obtain in brief form their experience with "606," the *Medizinische Klinik* sent to a number of investigators a series of ten questions with the request for an answer. The questions covered: 1, The sort of solution used for injection and the size of the dose tolerated; 2, after effects; 3, effects in primary affections; 4, effects in secondary symptoms; 5, effects in the late forms and gummatous diseases of the internal organs; 6, effects in metaluetic diseases; 7, failures; 8, duration of the cure; 9, recurrences; 10, effect upon Wassermann reaction. Replies thus far are from Jadasohn, Herxheimer, Linsler, Bering, Cramer, Spiethoff, Welander, Pinkus, Brandenburg, Rille, Wolters, Euschke, Treupel, and Juliusberg. The answers to the first question showed a great lack of uniformity in the solution employed, while the maximum dose varied from 0.5 to 1 gramme. Some writers had tried more than one solution and gave comparative after effects, which were mainly local pain, elevation of temperature, infiltration, and sometimes other symptoms that were usually transient and not serious. The effect in the primary disease was good and prompt in most cases, but there were quite a number of exceptions. The same seems to be a fair summary of the answers to the fourth and fifth questions. With regard to metaluetic diseases most of the answers read "no experience," and several of the others that the period of observation had been too short to permit of any conclusions. Failures were few in number and usually ascribed to too small a dose. The permanence of the cure can-

not be told as yet. Recurrences have been met with several times. The observation on Wassermann's reaction did not give uniform results.—*New York Med. Journ.*, 8 Oct.

EHRLICH'S "606" IN TREATMENT OF SYPHILIS.

Hoffman, *Medizinische Klinik*, 14 Aug., states that recurrences have been observed in a number of cases of syphilis after treatment with "606" in the customary dosage, and that by-effects have accompanied the use of the remedy to such an extent as to invalidate the claim made for the "606" that it is entirely harmless. In his experience with it by-effects were noticed only when the drug was in acid solution, while they were absent when a neutral solution was used. The remedy does not certainly kill all the spirochetes as claimed, he says, as he was able in one case to demonstrate the presence of lively spirochetes in lesions on the genitals and tonsils a week after the injection of "606." In the case of a boy of 15 with syphilitic ozena from inherited taint, the improvement at once under the "606" was remarkable. In a case of ulcerated gummas in the mouth, throat and testicles of a man of 40, high fever, pulse of 140 and dyspnoea followed the injection of the "606," other signs indicating central pneumonia of embolic origin and secondary pleurisy with extreme weakness of the heart. He ascribes this syndrome to dislodgement of a thrombus in the gluteal muscle following injection of a very acid solution; nothing about the syndrome suggested local infection of the site of the injection. In two other cases there was considerable disturbance of the heart action, pulse running up to 120 and 160, the area of dullness spreading toward the right with accentuation of the second sound. These findings persisted for a few days and then gradually subsided. In another case there was a slight albuminuria. No visual disturbances were ever observed. He knows of a case in a Bonn institution in which the patient died suddenly the night after the injection. Ehrlich adds the details of this last fatal case as he has obtained them by telegraph. The patient, he says, was a woman of 33 with syphilitic apoplexy, paresis of the legs, tachycardia, difficulty in swallowing and accelerated breathing. The conditions in this case should have forbidden the use of the "606," he declares, as he has expressly rejected all responsibility when the remedy is given to other than those healthy except for the syphilis, and the organs sound. He also excludes the metasymphilitic diseases from treatment with "606." He reaffirms that given in the right way and with proper indications the remedy is free from dangers and does not induce any appreciable by-effects. Ehrlich has the records now of over 3,000 cases.—*Journ. A. M. A.*, 17 Oct.

EHRlich's "606" IN SYPHILIS.

Herxheimer, *Deutsche Med. Woch.*, 18 Aug., states that in 11 weeks' experience with "606" and 83 cases of syphilis no by-effects of consequence were noticed beyond the local painfulness and febrile reaction, all of which are avoided by the later improved technic. There was transient retention of urine in one neurasthenic patient, but urination became normal again at once after a sitz bath. The reflexes behaved normally in all cases. According to Ehrlich's directions, the fundus of the eye, the heart, lungs, liver and kidneys were investigated in every case before the drug was given and any pathologic findings caused the patient to be excluded from this method of treatment. The findings in regard to spirochetes, the blood count of the Wassermann reaction were also recorded. No spirochetes could be discovered in 82 cases 48 hours after the injection, nor has recurrence been observed during the 11 weeks to date. In the other case the spirochetes did not seem to be affected by the drug, and A. Glück has encountered two similar cases; it seems as if certain rare strains of spirochetes must be unsusceptible to the action of the drug, just as some have been known to be mercury-fast. In a case of universal psoriasis of 18 years' standing there was extensive desquamation after the injection but after 48 hours conditions had returned apparently to the same as before the injection. Otherwise, Herxheimer's experience has been favorable in regard to the efficacy of the drug and, like others, he mentions especially its prompt and effectual action in malignant syphilis. [Jellinek raises a warning voice not to be too hasty in judgment of the new remedy for syphilis, saying that the lay press throughout Germany is proclaiming it far and near as a prompt and radical cure for syphilis and is thus throwing down barriers against venereal infection by removing the fear of syphilis. Jellinek comments further on the actual criminal optimism which is being fostered among the masses by the marvellous stories in regard to "606" that are issuing from the hospitals. He says this in the *Klin.-therap. Wochenschrift*, 1910, XVII, 80, in commending a pamphlet on sexual hygiene by Prof. S. Ribbing of Lund, Sweden, which he regards as a model work for young men on this subject.]—*J. A. M. A.*, 24 Sept.

EHRlich's "606" IN SYPHILIS.

Brandle and Clingstein, *Medicinsche Klinik*, 21 Aug., report their experiences with 27 cases of syphilis. The results were sometimes brilliant but in others not particularly satisfactory, fully as good results being attainable, they say, under the ordinary measures. The promptly

favorable action of the drug in malignant syphilis, however, was particularly striking. Eye-effects were observed in the vascular system; in several patients the blood-pressure was increased immediately after the injection while from the second to the third day the pulse was inclined to be accelerated and small but there was no threatening symptoms. Three patients, however, presented signs of collapse of brief duration. (Spatz has reported similar experiences in the *Wiener med. Wochenschrift*, 1910, No. 27.) The pulse kept fast longer than corresponded to the fever. Other symptoms eventually ascribable to arsenic intoxication were headache, dizziness, nausea and vomiting which were observed in several cases. Only slight by-effects on the part of the nervous system were noted; in about a fourth of the cases the tendon reflexes were exaggerated for a few days after the injections. Most of the patients gained greatly in weight after the injection, a gain of from 6 to 15 pounds in a few weeks being the rule. The Wassermann reaction has persisted positive to date in all but one of the patients. The author adds in conclusion that the possibility of local persistence of traces of the arsenic suggests that serious results might follow continued or repeated use of the drug, similar to the tragedies that have followed the use of gray oil, that is, an oil suspension of metallic mercury.—*J. A. M. A.*, 24 Sept.

EHRLICH'S REMEDY FOR SYPHILIS.

Dr. Samuel J. Meltzer, *N. Y. Med. Jour.*, Aug 20, '10, says that the advance of medical science in our days is forcibly illustrated by the amazing discoveries in the domain of syphilis which have followed one another in rapid succession within the last five years. First came the message that the cause had been discovered by Schandin, then the further news that Metchnikoff and Roux had succeeded in transmitting syphilis to monkeys. Then loomed up the discovery of the Wassermann reaction, which became of immense service in the recognition of the disease long after the disappearance of its usual manifestations. Now comes the climax—the great message that Ehrlich has perfected a remedy which by one injection frees the body from the spirochetes in less than twenty-four hours and cures primary, secondary, and tertiary lesions in two weeks or even in less time. Thousands of cases of syphilis have now been treated with this new remedy by many leading dermatologists of all shades of temperament, and all use one term to designate the effect: it is startling, stunning! All seem to agree that one injection of "606" accomplishes more than a radical mercurial treatment for one year, that just such cases as do not respond at all to

mercurial and other treatments respond promptly to one injection of Ehrlich's new preparation. The favorable effect of the remedy seems to become noticeable already in a few hours after its injection. "I saw on Saturday a patient with a dirty, coated erosive chancre and about twenty rose spots on the body. I gave him an injection of '606' at 3.30 p.m. At 7.30 p.m. nearly all the rosela had disappeared and on Sunday morning the chancre was clean and nearly without any induration." (Wechselmann.) No complications have yet been observed, except for pain at the point of injection, which sets in late and lasts for many days. The facts regarding the best methods of dissolving the substance, the mode of injection, the dose to be used, and other details are carefully collected and studied and need not be mentioned here. The preparation is, so far, distributed only among a selected class of observers, with hospital facilities, for a careful study of the details, which will be carefully established before the new preparation is handed over to the general practitioner.—*Medical Times*, October.

EHRLICH'S "606."

M. S. Kakels, *Medical Record*, 24 Sept., has used Ehrlich's dioxy-diamidoarsenobenzol in two patients, tertiary cases which had not yielded to any previous treatment. The results obtained, our author remarks, have been beyond expectation. He concludes that the time elapsed from the injection to the publication of his report, about two weeks, is too short to offer it as a complete observation of the results and final effect of the remedy. The remedy is being used according to the strict instructions of Professor Ehrlich. It is only injected in syphilitic patients free from other organic lesions, either of the liver, kidney, heart, or circulatory system. The eyes are examined in every instance for optic nerve lesions. It is also only injected in patients who are under hospital surveillance where accurate records can be taken.—*New York Medical Journal*, 1st Oct.

109 CASES OF SYPHILIS TREATED WITH "606."

Glueck, *Münch. Med. Woch.*, 2 Aug., gives a very interesting résumé of his experience with this preparation. His patients were both male and female, varying in age from twelve to seventy years. The rapidity of healing is particularly noted. The size of the dose seems to have a special influence of the shortness of the healing process in the tertiary form; in six cases given 0.3 gramme, the symptoms disappeared

in from twenty-one to forty-seven days, six given 0.4 gramme recovered in from six to twenty-one days, and two that were given 0.5 gramme were discharged in five days. In a case of syphilitic arthritis complicated with periostitis of the tibia and gummata of the skin not a trace of the trouble was left at the end of six days. Wassermann's reaction was observed in only twenty cases. In five the reaction was negative in from thirty-five to forty days without repetition of the dose; in the remaining fifteen, in whom the test was made in from eight to twenty-one days after the injection, the reaction was positive. Almost every case with secondary symptoms was examined for spirochætæ, which usually disappeared in from twenty-four to forty-eight hours; in one case of sclerosis none could be found at the end of sixteen hours and in two others on the fourth day. Thus far he has observed no recurrences, but the time of observation was too short for him to determine the final results. In only two cases were the results not altogether satisfactory, and the patients required a second dose.—*New York Med. Jour.*, 3 Sept.

EHRLICH-HATA REMEDY—"606."

B. C. Corbus, Chicago, *Journal A. M. A.*, October 22, makes a preliminary report from personal observation of the use of this preparation in Wechselsmann's clinic in Berlin. He states that he can testify that spirochetes begin to disappear in from eighteen to twenty-four hours after injection of the remedy. Corbus states that the number of different technics is surprising and confusing, as each clinician has his own. Corbus prefers Lesser's technic, which he describes as follows: Take a graduated cylinder with ground glass stopper, in which there are about one dozen glass pearls to assist in mixing. Add "606" salt; immediately add 15 c.c. hot water, shake vigorously until every particle of the salt is dissolved; then add 2 c.c. normal hydrate (NaOH) solution; a precipitate occurs. Then continue to add sodium hydrate solution in very small quantity, shaking vigorously after each addition, until the solution begins to clear; then drop by drop, until we have a clear solution. This should be neutral; if the cylinder does not contain 20 c.c. of solution, sterile water is added up to that amount. Then 10 c.c. of this solution is injected deep into the buttocks on either side, always taking care to cleanse the part with soap, water and iodine. In every instance patients should be sent to the hospital for treatment, and care should be taken that they rest for one-half hour after the injection. Corbus concludes his article by saying that looking into the future, it seems hard to prophesy what we are to expect from a single injection.

In order that our results may fulfill the theory of Ehrlich's "therapia sterilisans magna," the following conditions are necessary: First, one must not administer "606" in any condition that is not spirochetal origin. Second, there must be absolute certainty of diagnosis by means of the Wassermann reaction or by examination for spirochetes. Third, the most careful and painstaking technic in preparing the substance for injection and in the injection itself must be observed.

DO SPECIAL DANGERS ATTEND THE INTRAVENOUS INJECTION OF "606?"

Ehrlich, *Münch. Med. Woch.*, 30 Aug., says that he does not think the intravenous injection as such presents special dangers. He thinks that patients with very far advanced degenerative process of the central nervous system form a special group which is endangered by the introduction of the preparation and should be excluded from the treatment. In two such cases death has resulted after subcutaneous and intramuscular injections. He thinks that small doses, from 0.3 to 0.5 gramme, may be injected into the veins without hesitation when there is no serious disease of the brain, arteriosclerosis, or functional disturbance of the heart, particularly angina pectoris.—*N. Y. Med. Jour.*, 1 Oct.

EHRlich's "606" IN SYPHILIS.

Kromayer, *Berlin Klin. Woch.*, 22 Aug., reports 27 cases. In 3 cases some of the symptoms persisted after the injection and in 5 others there has already been a recurrence. A positive Wassermann reaction became negative in only 25 per cent. of the cases. His experience confirms the rapid reabsorption of the pathologic tissue of the syphiloma and the rapid healing over of ulcerations from the stimulation of the epithelium to proliferation.—*Journ. A. M. A.*, 8 Oct.

EHRlich's PREPARATION "606" IN THE TREATMENT OF SYPHILIS.

Dr. Henry Cattell recently spoke before the Philadelphia County Medical Society on the technic used in Wechselmann's wards of the Virchow Hospital in Berlin for the treatment of syphilis with Ehrlich's Preparation "606" and said: "I saw towards the end of July five injections given with '606' and had the opportunity of examining about 100 cases in all so treated.

Our knowledge in regard to syphilis has been increased by:

(1) The discovery of the active agent by Schaudinn and Hoffmann.

(2) The diagnosis of poison by means of the Wassermann reaction or one of its various modifications.

(3) The inoculation of apes, rabbits and guinea-pigs with syphilis.

The capsule containing the yellowish compound, diamidate-oxyarseno benzene, is broken and collected in sterile mortar and dissolved in 1 to 2 ccm. of *concentrated* sodium hydrate. Methyl alcohol is no longer employed. After solution has taken place the preparation is again precipitated by the addition of *glacial* acetic acid. Fifteen to 20 ccm. of sterile water are added, and the whole centrifugated, the supernatant water poured off, more water added, and the whole brought to neutral by either the addition of a decinormal solution of sodium hydrate or of a 1 per cent. solution of acetic acid. The dose used at the time I was in Berlin was 0.5 to 0.6 gm. for an adult and 0.025 gm. for a babe. The preparation is injected in a large syringe beneath the scapula in an area which has first been painted with iodine. One of the strongest reasons for choosing the subscapular region is that, in case of arsenicalism, the location is easy of access surgically. A lump is formed which requires some time to disappear. The injections are sometimes followed by pain, fever or malaise, immediately afterwards or coming on after several days. The oldest case of inoculation is now between eleven and twelve months, and Ehrlich must have now nearly 8,000 records, 7 deaths, of treated cases. It is perfectly marvellous to see a patient come into the wards with pronounced evidences of the disease, and to observe the immediate improvement after treatment. The spirochetes begin to disappear the first day, and in forty-eight to seventy-two hours they are no longer found. The Wassermann may, however, remain positive for several weeks.

A test similar to that employed in the Calmette or Von Pirquet reaction must always be made to determine whether or not the patient has been treated before by arsenic or is peculiarly susceptible to the drug. Ehrlich insists that everybody before being inoculated should have the eyes examined and to see that there are no complications like grave heart or kidney disease present. This mode of treatment has been done by the best observers that Europe affords, and has been undertaken under control conditions, such as have never existed before. The results so far have been perfectly astonishing, though I saw three cases in Wechselmann's hands which had returned for second treatment. The reason given for this was that these were some of the earlier cases in which too small a dose had been administered.

The users of this remedy are so enthusiastic that they advise it in practically every case. In one of the wards there were no less than ten syphilitic babies suffering from every manifestation of inherited syphilis.—*Boston Medical and Surgical Journal*, 13 Oct.

EHRLICH'S DIOXYDIAMIDOARSENOBENZOL.

Nichols and Fordyce, *J. A. M. A.*, 1 Oct., report fourteen cases treated with "606" during May and June. They believe that we have in arsenobenzol a most thorough agent in controlling the manifestations of syphilis which are caused by the presence of the spirochætæ. They conclude that it may be reasonably hoped that all the lesions which depend on the presence of the organism will be favorably influenced and the most we can expect in the secondary degenerative changes is that the process may become arrested. Further experience with the drug will determine with more accuracy the dose which is necessary to bring about a cure, the time that must elapse before a second dose can be safely given, and the more definite indications for its use after relapses or failure of a single dose to control the symptoms.—*N. Y. Med. Journ.*, 8 Oct.

TREATMENT OF SYPHILIS WITH "606."

Junkermann, *Medizinische Klinik*, 28 Aug., reports 25 cases in which Ehrlich's remedy was used; no injurious by-effects were observed although in two weakly patients there was a brief change in the heart rhythm with sweating and anguish, but no nervous symptoms. No spirochetes could be discovered in the lesions after the injections.—*J. N. M. A.*, 1 Oct.

THE SUBCUTANEOUS USE OF "606."

Michaelis has tried the subcutaneous injection of this remedy and says that he found it well borne without exception. Often there was severe pain for several hours after the injection, but this was controlled by moist compressions; sometimes a transient pain appeared again on the third day, but sometimes there was absolutely no sign of inflammation. The great advantage presented by the subcutaneous over the intramuscular injection is that walking and sitting are not interfered with by a dense infiltrate. The quickness of the action is greater than after the intragluteal injection because of the greater surface exposed to resorption.—*N. Y. Med. Jour.*, 17 Sept.

EHRLICH'S ARSENOBENZOL.

Neisser and Kuznitzky, *Berlin Klin. Woch.*, 8 Aug., report that they have used this remedy on nine patients with primary syphilis, forty-eight in the secondary stage, nine in the tertiary, ten in the latent stage, usually years after the infection, six with syphilis of the brain and spinal cord, six tabetics, two paralytics, three patients with parenchymatous keratitis, and three patients who did not have syphilis, two of whom had psoriasis and one leucæmia. In almost all cases in which visible symptoms of syphilis were present such symptoms retrograded and disappeared in a surprising manner. The results exceeded the most brilliant results of mercury and iodide yet seen. The effect not only to the disappearance of the spirochætæ previously present in abundance, but to the pathological process itself. Exceptions were noted. Sometimes spirochætæ were still demonstrable after nine or ten days. Tertiary process showed for days no tendency to heal, but finally healed slowly. No visible effect was produced in the cases of parenchymatous keratitis. But these are not surprising. In the first place the question arises whether the dose was too small for the individual affected; then whether the local circulatory always favor so quick a local action of a drug carried in the general circulation. The author then discusses the introduction of the drug in dissolved or undissolved form by intravenous, intramuscular, or subcutaneous injection. They favor intravenous injections. Mild after effects were noted, nothing serious. The effect on the subjective well being of the patient was good who, in almost all cases, rapidly gained in weight. The action of this new preparation is, they think, directly parasiticide upon the spirochætæ, both destroying them and preventing their increase. Final results are unknown as yet because the first patients were discharged only about three months ago, but they believe that every syphilitic, who does not present special contraindications, should be advised to try this new remedy.—*N. Y. Med. Jour.*, 17 Sept.

TREATMENT OF SYPHILIS WITH "606."

Iversen, *Munch. Med. Woch.*, 16 Aug., says that an intravenous injection of "606" is usually followed in two or three hours by a chill lasting half an hour, followed by a rise of temperature, frequently by pains in the limbs, and in some cases by vomiting and fluid stools. No traces of arsenic were detected in the vomiting material. The next day the patient feels well except for some weakness. In four cases in which the syphilitic symptoms had not disappeared at the end of three

or four weeks, because of an insufficient dose, a second dose was given, was borne well, and produced no unpleasant after effects. Previous treatment with mercury and the iodides presents no bar to treatment with "606." The general condition of the patients was markedly improved after treatment, most of them gained in weight and had good appetites. No bad after effects were observed. It is clear that the rapidity of the disappearance of the syphilis after a single injection of "606" depends on the degree of the anatomical changes. Thus superficial erosions, roseolo, plaques, pharyngitises, and angina disappear in a few days, while papular and pustular syphilides require from ten to fourteen days or longer. Moist papules dry in a few days, yet their disappearance needs a longer time. In consequence of their anatomical conditions primary scleroses and adenites require the longest time yet the immediate effect can be noted, as they become softer and gradually melt away until they disappear, taking three or four weeks or more. Ulcerations, gummata, and the symptoms of hereditary syphilis exhibit a beautiful curative effect. In case of the primary ulcer the exudates of the chancre were examined for spirochætæ and "606" was then injected. Two or three days later no spirochætæ could be found. The same examination was made of the enlarged inguinal glands with the same result. This observation points the way to a method of controlling the treatment, inasmuch as if unchanged spirochætæ should at any time be found in the inguinal glands five or six days after an injection it would indicate that in that case the treatment had been insufficient and that another injection was indicated. Wassermann's reaction became negative in Iversen's cases between the twentieth and fortieth day, in two cases on the eighth and tenth days.—*N. Y. Med. Jour.*, 17 Sept.

TREATMENT OF A SYPHILITIC INFANT BY INJECTION OF THE MOTHER WITH "606."

Taege reports a case in which a child born of a syphilitic mother showed the signs of hereditary syphilis. In order to study what effect would be produced on the pathological changes in the child by treatment of the mother, who nursed the infant, she received an injection of 0.3 gramme of "606." On the following two days the symptoms were exacerbated, on the third day they stood still, and then all the symptoms suddenly retrogressed, on the fifth day they had disappeared almost completely, the child no longer whimpered but cried strongly and nursed the breast empty.—*N. Y. Med. Journ.*, 17 Sept.

RECENT EXPERIENCES WITH "606."

It is well-known that the discoverer of a valuable process or material and the inventor of an important object frequently enriches the world, while others reap the harvest of their genius. The exploitation of suffering humanity by the medical profession, we are happy to believe, is not a frequent occurrence. We learn, however, from the *Muenchener medizinische Wochenschrift* (No. 38, 1910) that, according to Dr. Pionski, a few medical men have succeeded in obtaining from Professor Ehrlich samples of "606," and are using the remedy not for hospital cases, but for their private patients, who have to pay exorbitant fees for the treatment. The Committee of the Berliner ärztliche Standesvereine (Berlin Medical Professional Associations) has resolved to refer to the various societies for discussion a motion to the effect that it is unethical for medical practitioners to communicate their observations on the new drugs to the daily press. We learn from the same source that a certain quack firm advertises that, as soon as "606" can be obtained, the advertiser will at once begin to treat his patients with it. As the treatment will be undertaken in the order of application it is advisable for patients to enter their names without delay. A doctor of Bucharest is reported by the *Vossische Zeitung* to have advertised that he had obtained quantities of "606" from Ehrlich and was prepared to treat patients with it. Large numbers flocked to him, until it was discovered that he had never obtained the drug at all. He was prosecuted and imprisoned. These sad stories of the ignoble side of our profession convey their lesson. The private practitioner, whether in general or special practice, must realize that it is directly in the interest of the public that the greatest caution should be exercised before the verdict on a new drug should be passed, and that when the disease which the drug is supposed to cure is a common one, as is the case with "606," a thorough investigation should be conducted by a chosen few before the drug should be used by all and sundry. In the meantime favourable reports from clinicians of all nationalities are being published in almost every issue of the German medical papers. Thus in the *Muenchener medizinische Wochenschrift*, of October 4th, Favento, writing from Trieste, states that exact observations on 156 cases have convinced him that "606" is the most powerful antisyphilitic remedy known. He finds that it does not harm the human organism. Cases of neuro-retinitis and nephritis did well under its action. Apart from its curative action on syphilis, it strengthens the organism, increases the weight of the patient, and acts beneficially in every way. Ehlers, in No. 41 of the same journal, speaks highly of the preparation, and further reports some interesting observations made by Bjarulyédinsson

of Reykjavik (Iceland). In leprosy the clinical manifestations are not perceptibly affected, but the bacilli are found to undergo a granular degeneration. The author has not been able yet to determine whether or not the bacilli are alive. Herxheimer and Reinke have analysed two cases of congenital syphilis. The patients were in a hopeless condition from the first, and died two and four days after the injection respectively. No spirochætes were found in the organs save the lungs, where they showed marked agglutination and advanced degeneration. In the opinion of the authors, these cases prove the powerful action of the preparation in destroying spirochætes, since the parasites are always present in overwhelming quantities in such cases. Werner, in the same issue, finds that "606" acts powerfully as an antimalaria remedy. It is more active in tertian fever than in tropical fever. These are only a few of a large number of favourable reports on this preparation. The last number of the *Deutsche medizinische Wochenschrift* is devoted to "606," and contains the speeches and discussions which were delivered at Königsberg at the Naturforscher und Aerzte Versammlung this summer. A short summary of their contents will be given later. Lastly, mention should be made of a paper published by Karl Greven in the *Muenchener medizinische Wochenschrift*, of October 4th, dealing with the excretion of the preparation. Arsenic appears in the urine very rapidly after the injection. The excretion continues for some fourteen to eighteen days, but the period is shorter after subcutaneous than after intramuscular application. Simultaneous application of mercury delays the excretion, while simultaneous application of iodides shortens its duration.—*B. M. J.*, 22 Oct.

INFLUENCE EXERTED UPON THE SYMPTOMS OF AN INFANT WITH HEREDITARY SYPHILIS BY THE SERUM OF A PATIENT WHO HAD BEEN TREATED WITH "606."

Meirowsky and Hartman, *Med. Klinik*, report a case in which a syphilitic infant was treated with injections of the blood serum of other syphilitics who had received injections of "606." This method was tried because on account of the inability of the mother to nurse the child a repetition of the experiment performed by Taege and Duhot, to ameliorate the condition of the child by injection of the mother with "606," was impracticable. The patients from whom the serum was taken had been injected 2, 3, 5, and 14 days previously, and eight injections of varying quantities were made within a fortnight. Two days after the first injection a decided improvement was noticed, and this increased after the subsequent injections. At the same time a cure was

evidently not effected because a few days after the last injection a coryza and a periostitis of the right arm developed.—*N. Y. Med., Journ.*

"606."

Replies to the questions pronounced by the *Medizinische Klinik* continue to come in, the additional ones thus far from von Zeissl, Pick, Grouven, Schulz, Aschaffenburg and Geissler, Clemens, McDonagh, Wechselmann, Michaelis, Kromayer, Saalfeld, Halberstaedter, Bruhns, Duhot, Geronne, Deneke, Ledermann, Zumsteeg, and Chrzelitzer. Some of the replies are very brief and lacking in data, others are quite full and are evidence of considerable experience. The solutions used vary and are perhaps responsible for the varying observations regarding the pain, fever, and other symptoms induced by the injection. Brilliant results in primary and secondary syphilis are reported by all who have used the remedy in these stages of the disease, as well as in late syphilis, though some admit that the time of observation has been too short to permit conclusions to be drawn. The latter is insisted upon with regard to metaluetic diseases by all who have used the remedy in such cases. Few failures and not many recurrences are reported. There is no general agreement as to the effect of Wassermann's reaction.—*N. Y. Med. Journ.*

HOW TO PREPARE SOLUTIONS OF "606."

Kromayer, *Med. Klinik*, replies to objections that have been made to his ten per cent. emulsion of "606" in liquid paraffin and reasserts his statement that while "606" itself is irritating to the tissues injections of his emulsion can be made without much pain, that the emulsion is easily prepared, is stable so it does not have to be prepared freshly for each case, and that it can be used not only in the hospital, but also in ambulant cases.—*N. Y. Med. Jour.*

INTRAVENOUS INJECTION OF "606."

Schreiber, *Münch. Med. Woch.*, describes the technique of intravenous injections of "606" with a description of the instrument used. The remedy should never be given in a concentrated solution, but in considerable dilution. On account of its complicated technique he does not think this method of administration suitable for general practice,

but says we must strive to find a means whereby it may be injected into the muscles or subcutaneously easily and without pain. Still he has the impression that in the majority of cases results are obtained more quickly and more certainly from the intravenous than from the intramuscular injection.—*N. Y. Med. Jour.*

EXPERIENCES WITH "606."

Huegel and Ruete, *Münch. Med. Woch.*, have used the remedy in thirty cases and have obtained results similar to those generally reported. They have not observed any of the bad after effects which have been met with in the use of atoxyl and arsacetin.—Sieskind reports concerning 375 patients treated under the direction of Wechselmann in Berlin. He states that "606" exhibits the following advantages over mercury: 1. In cases in which mercury fails the new preparation is successful. 2. A single injection is able to accomplish the same as is accomplished by from eight to ten injections of an insoluble salt of mercury, or from five to six weeks of inunction. 3. The stay of the patient in the hospital is reduced to from four to sixteen days. 4. To the patient the advantages are manifold. They are: A. For hospital patients: (*a*) the shortened stay in the hospital enable the preparation to be used on a greater number of patients and thereby the danger of infection is reduced in the community; (*b*) the patient is kept a shorter time from his work; (*c*) the treatment is less unpleasant than inunction. B. For ambulant patients: (*a*) the possibility of discretion; (*b*) the possibility of reducing the danger of infection through prostitution; (*c*) the possibility of shortening the duration of private treatment. 5. The patients are not exposed to long continued chronic troubles, such as chronic mercurialism and constitutional iodism. Finally the writer gives the following indications and contraindications: The preparation should be used: 1. In cases of malignant syphilis and those that ulcerate early, particularly when they are refractory to mercurial treatment. 2. In cases of any period of the disease in which mercury is not well borne. 3. In cases in which recurrences continually take place in spite of repeated mercurial treatments. 4. In cases of fresh syphilis while the primary sore still exists before the outbreak of the exanthem, if possible with excision of the primary sore, or with destruction of it by means of the hot air treatment, or in conjunction with local subcutaneous injections of a very small quantity of the preparation. 5. In tuberculous syphilitics in whom the effect of the mercurial treatment upon the tuberculosis is bad. 6. In cases of visceral syphilis, the patient suffering from eplieptoid attacks. 7. In decrepid persons in whom the eyes,

heart, and lungs are sound. 8. In cases of latent syphilis in which a negative Wassermann reaction has not been obtained in spite of repeated treatments with mercury and iodide. 9. In parasyphilitic diseases in their early stages. The contraindications are: 1. Serious nonsyphilitic diseases of the retina and optic nerve. 2. Serious organic diseases of the heart and bloodvessels. 3. Serious diseases of the lungs, excluding tuberculosis. 4. Serious nonsyphilitic diseases of the kidney. 5. Advanced degenerative diseases of the central nervous system. 6. A temporary contraindication is the presence of angina and fever. In these cases the injection should be postponed until these troubles have subsided.—Sellei adds his testimony in regard to the action of "606," based on the observation of eighty-six cases.—*N. Y. Med. Journ.*

"606" IN THE SYPHILIS OF CHILDREN.

Kalb, *Wiener Med. Woch.*, reports two cases of acquired syphilis and six cases of congenital in children treated with "606." The preparation was injected into the glutæi in neutral suspension in doses of from 0.02 to 0.03 gramme. The children bore the remedy without trouble, apparently without pain, and no infiltrate or other unpleasant incident was noticed. One child had Parrot's pseudoparalysis, another had great enlargement of the liver, and a third was being nursed by a syphilitic mother who was being treated with calomel. One child, the one nursed by the syphilitic mother, died a few days after the injection. The autopsy revealed diffuse serofibrinous peritonitis, fibrinous pleuritis on both sides, a low degree of atelectasis of the right lung, congenital syphilis, papules on the lower lip, osteochondritis luetica, gummata of the liver, interstitial hepatitis, indurative pancreatitis, a tumor of the spleen, gummata in the kidneys, acute parenchymatous nephritis, hæmorrhages in the mucous membrane of the ureter and of the bladder, and great anæmia. No trace of arsenic could be found in the liver. Many organs and the aorta were examined for spirochætæ, but they were found only sparsely in the liver alone, part pale, part well stained. In the kidneys great quantities of the *Bacterium coli* were found, probably a post mortem phenomenon. The preparation injected does not seem to have been the cause of death. The writer inclines to the view that the nursing mother should be treated with "606" when possible. In acquired syphilis of children the healing of the clinical symptoms followed the same course as in adults. In congenital syphilis the exanthem disappeared the most quickly, then the bone changes, such as periostitis, the pseudoparalysis, and the coryza. Hearing was likewise quickly improved.—*N. Y. Med. Journ.*

EHRlich's "606" IN SYPHILIS.

Gennerich, *Berlin Klin. Woch.*, gives the details of thirty cases of syphilis in which "606" was applied, he says, with surprisingly good results. Signs of general disturbance were observed in only one case, although moderate acceleration of the pulse was regularly noted. In one case of complete paresis the patient could stand up and hold out his hand the day after the injection, and the mind was clear for the first time in two months. In a case of total hemiplegia the arms could be bent to a right angle the next day and the improvement progressed afterward. A similar syphilitic hemiplegia in another case has proved refractory to a long and intensive course of mercurial treatment, while in another case of total paresis, three months of mercury were required to produce the improvement realized in twenty-four hours after the injection of "606."—*J. A. M. A.*, 29 Oct.

"606" BY PROFESSOR A. BAGINSKY.

But though what I have to communicate to you is short, it is none the less important, because matters have been discussed at the last meeting of the medical societies which may inaugurate a new area in the treatment of syphilis; of course I refer to the treatment of syphilis with the new arsen-preparation by Ehrlich-Hata, the so-called dioxy-diamido-arsenobenzol, or as Ehrlich called it for the sake of shortness, "606." It was necessary to be present at the lecture of Dr. Wechselmann, the Director of the Syphilis Department at Virchow's Hospital, and to watch the immense impression he made upon his audience with his communications and demonstrations of numerous patients, to understand adequately how highly Ehrlich's great therapeutic feat was thought of. For some years the whole of Ehrlich's medical striving and endeavours have moved in but one direction, namely, to discover by chemical means—through a *therapia sterilizans magna*—some weapon to attack and destroy the living disease-producing organisms in the body without damaging the tissue cells, and in this way to extinguish the infectious diseases *quasi ab initio*. Ehrlich had not succeeded up to the present with the acute infectious diseases, because the bacteria, which after all have to be looked upon as the true existing cause of this group of diseases, seem to have a greater resisting power than the more highly organized trypanosomata and spirochaetes, and in fact the protozoa in general. But there is not much doubt, if one considers impartially the facts and material in hand, that he has achieved a splendid success with syphilis, the most chronic and the most stubborn of all infectious diseases.

Wechselmann explained that Ehrlich tried several hundred preparations on animals, who had been artificially infected with the spirochæte pallida, without success, until he found a preparation which he labelled "606." After injecting one single effectual dose, it had the effect of destroying the primary signs of syphilis, and the numerous spirochætæ disappeared. Ehrlich gave this preparation already last year to some doctors to experiment with, but subsequently it was decided that experiments on a larger scale should be carried out on the syphilitic patients at Virchow's Hospital, and Wechselmann undertook with pleasure this labour of love. It was shown that in eighty patients, who had been treated with this preparation, the primary signs of syphilis soon disappeared. Roseolar eruptions vanished after a few hours. Especially striking was the effect of this remedy in those obstinate cases which had already been treated without apparent success by several inunction cures. The dosage, which ranged from 0.45 to 0.6 grammes, was well tolerated without producing any ill-effects. Whether recurrence of symptoms takes place Wechselmann cannot for the present say, as he has only used the preparation for the last three months. The preparation seems to be very little toxic, inasmuch as no symptoms of arsenic poisoning have appeared yet. The injections were made into the guteal muscles. The preparation has to be dissolved first and then neutralized, as the injection of the acid solution is felt to be rather painful. The demonstrations of pictures and of cured cases illustrated in classical manner the statements of the lecturer. Ehrlich, who was present and enthusiastically welcomed by the medical society, as also Alt and Shreiber, who experimented with "606" and an earlier period, took part in the discussion, and they especially laid stress on the point that even in inveterate cases of syphilis and in those cases with severe nervous cachexia they were successful with this new remedy. It seemed to be clear to every one that here was launched forth a discovery which may rival the greatest which has ever been made in practical medicine. It is well known that since then all the satisfactory results obtained seem to confirm the communications of Wechselmann. Soon after the meeting Ehrlich gave me the preparation for trial and since then I have employed the same in elder children with complete success, and even in quite young children the preparation was in so far successful that the syphilitic symptoms disappeared, but it stands to reason that in small children much smaller doses have been used, because otherwise the injected quantity of the solution would be too large, and might cause mechanical damage to the tissues. I intend communicating my experiences more fully after I have given this remedy a more extensive trial.—*Folia Therapeutica*.
October.

OBSERVATIONS ON THE EHRLICH-HATA "606."

John A. Fordyce, of New York, writing in the *N. Y. Med. Jour.*, for 5th November, goes fully into this subject. He states that they have up to date probably about 15,000 cases treated by the new remedy, From the results thus far obtained it would appear that a real specific has been produced.

This remedy is not a chance discovery. Ehrlich and his associates, made many experiments. It was the 606th that yielded the present form of the preparation. The remedy is parasitotropic, that is has special affinity for the parasite rather than the tissues of the patient. It is a sulphur yellow powder, put up in vacuum tubes or single doses. It is a double arsenic salt of strongly acid reaction.

The dose varies from .3 to .7 gramme. The usual adult dose is .6 gramme, though .9 gramme has been given without evil results. Children tolerated from .02 to .09 gramme. Michaelis has found that monkeys could stand .15 gramme per kilo. In rabbits infected with syphilis one-tenth of the amount that can be tolerated cures the disease in two or three weeks.

The remedy can be administered intravenously, subcutaneously, or deeply into a muscle. By the vein there is very little pain, and Schreiber prefers this method. He thinks the remedy acts quicker and with greater certainty. When given under the skin care must be taken to raise a good quantity of tissue, so that the injection is really under and not into the skin. Into the muscle seems to be the general method adopted. Iversen prefers both intravenous and intramuscular methods in combination.

There are many plans for the preparation of the dose. The one adopted by Junkermann is very simple and gives good results. He dissolves the remedy in 6 c.c. sterile water by thorough shaking. He then adds drop by drop a fifteen per cent. solution of caustic soda until the precipitate is again dissolved and the solution clear. The product is the monophenolate and is weakly alkaline.

Kromeyer rubs the "606" with ten per cent. paraffin oil. To this he adds sterile water so that each c.c. will contain .1 gramme of the remedy. This is injected into the gluteal muscle. He has treated 250 patients without complications.

For intravenous injection Schreiber adds the remedy to 20 c.c. sterile water and shake until clear. He then makes up to 100 c.c. with normal salt solution. Then for each .1 gramme he adds .7 gramme normal caustic soda solution, when the precipitate is dissolved enough normal salt solution is added to make up to 150 to 250 c.c.

It is not yet possible to determine what percentage of cures are effected. The Wassermann reaction becomes negative in a good many cases in about 15 to 30 days. This reaction varies from 20 to 80 per cent. according to different observers.

EXPERIENCES WITH EHRLICH'S "606."

Fraenkel and Grouven, *Münch Med. Woch.*, 23 Aug., conclude from their experiences with "606" in over a hundred cases of syphilis that it is undoubtedly a remedy which will mark decided progress in treatment of this disease and possibly of others, but they report a fatality after its intravenous administration which they ascribe to an individual hypersusceptibility to arsenic. The patient was a waiter of about 25 who had suffered for years from severe disturbances in speech, word, blindness, etc., evidently of syphilitic origin, and had been in the psychiatric clinic for 18 months on that account. The drug was injected in a small amount of water (0.4 gm. to 15 c.c. of water). Fifteen minutes later symptoms of serious arsenic poisoning developed, proving fatal in 3½ hours. Autopsy showed extensive foci of softening in the left temporal lobe and distinct amounts of arsenic were recovered from the spleen, lungs and liver, the only organs examined for this purpose. Since this occurrence the intravenous route is no longer used in the clinic. No appreciable by-effects were observed in any of the other cases. In 30 the fate of the arsenic in the body was investigated and it was found that from 6 to 10 mg. was eliminated daily in the urine during the first week, and from 6 to 8 mg. in the second week, but after this no further traces could be detected except in a few cases in which 2 mg. was found, and up to 9 mg. in one case. The drug induced a decided and early turn for the better, they say, in all the cases except the one mentioned above, surpassing that ever attained by mercury.—*J. A. M. A.*, 1 Oct.

PREPARATION "606."

It can scarcely be a matter of wonder that the medical journals are still filled, so to speak, with literature on this engrossing subject. When we call to mind that it has for ages been the aim of medical science—the highest ideal, in fact, to which we as physicians have ever aspired—to discover a remedy that shall with some degree of certainty kill the germs of a disease without at the same time endangering life or health, it is small wonder that we should follow this new remedy, with its am-

bitious claims, with intense interest. If it makes good these claims we shall all welcome it as the first instalment of the ideal. Let us bear in mind one thing more, and that is, whatever happens to it in Paris or in London does not in any way invalidate the truly wonderful results of treatment by it obtained in Berlin, Vienna, Strassburg, or Frankfort. If physicians in the two former cities cannot produce by its use effects as good as those produced in the latter-named cities, it will be found that the fault does not lie in "Preparation 606," but in the way it is prepared or used.

Amongst recent users of the preparation is Dr. Leoner Michaelis, who reports the results of treatment in 110 cases. In 7 cases of primary disease recovery was brought about in from one to three weeks without any local treatment. In 15 cases of secondary disease previously untreated, skin exantheas, angina specifica, mucous plaques, etc., the reaction was without exception, the symptoms disappearing in a period corresponding to the anatomical character of the morbid changes. The papules in the hairy scalp reacted very quickly, so that even within 24 hours patients notice the change in combing their hair.

There were 22 relapsing cases after courses of treatment by mercury, which, however, had been favourably influenced by the treatment. In this group there were four cases of grave cerebral syphilis.

Thirty-three cases of the following group showed "real wonders." They were mostly cases with severe syphilitic symptoms that had been repeatedly treated with mercury or iodide, but all had failed to remove all traces of the disease. It was an amount of material not often met with in these times, supposed to be partially owing to desperate cases seeking perhaps new treatment. There were a considerable number that would, perhaps, have ended fatally in a short time, who had been unable to follow any employment for years—patients burdened with an obstinate ozæna that sickened all that came near them; patients with extensive ulcerated gummata of the skin, nose, lips, tongue; patients with nightly severe pains; these often recovered in a few days. No dry description could portray the overwhelming impression caused by recovery in a few days from illness that had lasted for months or years, and that had resisted every form of treatment. Only a few cases of very old spinal and cerebral lues were uninfluenced by the treatment. In these cases, no doubt, nerve degeneration had advanced to a stage from which recovery was no longer possible.

Fifteen cases of locomotor ataxy and eight of syphilitic paralysis (positive Wassermann reaction) were treated. In very advanced cases the injection, as might be expected, did no good. It is possible, too, that where patients became suddenly worse it was due to the injection.

On the other hand, incipient cases bore the injection quite well. The writer is convinced that the treatment will do no harm in these cases. Severe lancinating pains occurred in some cases, but these were looked upon as kind of reaction. As regards the result of the treatment, some success was obtained in some of the cases of tabes, and in one of progressive paralysis amelioration was obtained that was still maintained after the lapse of two months. As such remissions appear, however, spontaneously, the writer is careful to remark that in the case given it may have been of this nature.

The injections were also given in some cases of lympho-sarcoma and leukaemia, where arsenic was indicated, but without any effect. Michaelis considers that it would be actual malpraxis not to use the treatment in cases in which mercury has failed, or in which it cannot be borne.—*Med. Press and Circular*, 5 Oct.

EHRLICH-HATA "606."

Dr. Louis Fischer, who has had excellent opportunities for the study of the new remedy, contributes an article in Pediatrics. He makes some remarks on the chemical composition and the name of the composition, and mentions that part which Hata, the associate of Ehrlich, took in working out the final results.

The medication is a light colored powder in aseptic ampules of glass, and is dissolved in methyl alcohol or glycol to which about 10 ccm. of sterile water is added, then add one-half ccm. of one-tenth normal Na OH solution, add water enough to yield 25 ccm. The dose of the preparation used is from .1 to .6 grammes. It is given in the form of an intragluteal injection and used once only.

The Wassermann reaction is then made to control the result of the treatment. As a rule this is negative in 24 to 48 hours. This is the reason for claiming a specific action for the remedy. Only such cases were injected as yielded a positive Wassermann reaction.

Adults were used in whom mercurial treatment had been given with indifferent or no results. Some syphilitic adults of many years standing were also used for clinical studies.

Likewise children in whom distinct luetic manifestations existed were subjected to this form of treatment. In some instances intravenous injections were made and their effects compared with the intragluteal method of injection was inferior.

The specific effect in syphilis was noted on the mucous patches and on all syphilitic exanthematous eruptions papular or otherwise—ulcerous and all glandular swellings showed evidences of healing within a few

days after an injection. Chronic recurring ulcerations and eruptions disappeared so soon after an injection as to occasion surprise.

Clinical report of Abt, Schreiber, Wechselmann-Lange, Treupel are among the observers on record—so also Von Zeisl recently added to the specific virtues of this remedy.

Great enthusiasm prevailed at the last meeting of the Berlin Medical Society after the announcement of the new anti-luetic remedy which seems destined to aid—with one injection—in the destruction of the syphilitic infection.

Levi studied the urine following the arsenic injections and notes that arsenic is found at least 12 to 13 days therein local effect of the injection.

A slight erysipelatous redness and infiltration of the deeper structures was found in many cases—not in all. A slight rise of temperature was noted about three days after injection—the fever being about 100-100 three-fifths.

There was no disturbance of the nervous system—no ill effect on the vascular or gastro-intestinal tract—the heart was not affected, the urine showed no abnormality—no casts, there was no meth-haemoglobin in the blood. There was slight leucocytosis (Hirschfeld) in some cases. Even a case of severe nephritis subjected to this treatment did well. A case of pernicious anæmia—following a syphilitic infection one and one-half years ago—seemed slightly improved after above treatment.

Some observers looked for the disastrous effects on the optic nerve, and Fehr, in a very thorough clinical investigation reported no ill effects from this remedy.

Cases of pemphigus neonatorum were selected because they are usually fatal. Several cases of infantile syphilis were seen by me, but cannot be reported, as they are still under observation. So much can be said, however, that eruptions disappeared, ulcerations and sloughing of the uvula ceased and a general tendency to renewed vitality appeared, such as has never been noted with mercurial or K. I. treatment. From what has been seen by me it appears that this remedy offers a specific therapy in syphilis which will do away with the old mercurial remedies.

Some changes have been suggested in administering this remedy. as the use of methyl alcohol is not without dangers.

THE NEW REMEDY FOR SYPHILIS.

Dr. Wilhelm Wechselmann, physician in chief to the Dermatological Department of the Rudolf Virchow Hospital, in Berlin, presents in another column an interesting clinical report on Ehrlich's new remedy

for syphilitis, dioxydiamidoarsenobenzol, or "606." This paper, which was prepared for the *New York Medical Journal*, and is the latest authoritative statement of the results obtained from the use of the drug, will be read with the keenest interest by every physician, for every doctor in active practice is almost constantly confronted with some manifestation, either direct or indirect, of luetic infection.

Dr. Wechselmann's report is based on personal observation of more than 600 cases in which this remedy has been used with uniformly good results, though the extent of the good accomplished varied with the nature, age, and virulence of the infection and with the condition of the patient. In his summary he freely cites the experience and deductions of others, all of which tend to strengthen the hope that in the new remedy we have at last a specific for syphilis and probably for many parasymphilitic affections.

Dr. Wechselmann prefers the intramuscular to the intravenous injection and describes the method followed by him. As a rule a single injection of 0.3 gramme was given, though a repetition of the dose was found necessary in a few cases in which there had been recurrence of the symptoms. In some of these, however, so far as observed or reported, has there been any widespread manifestation of the disease, but only a recurrence of a few isolated local lesions. In a still smaller number of cases the disease has proved so refractory as to require a second injection before the disappearance of the symptoms.

Several have observed that the spirochæta disappear within twenty-four to forty-eight hours after the injection of the remedy. The Wassermann reaction usually disappears within from eight to forty days, in accordance with the severity of the infection.

In parasymphilitic complaints, such as tabes, paralysis, pupillary rigor, and similar troubles, there seems room to hope for improvement save in very old cases and in those where the tissues have been too greatly damaged.—*N. Y. Med. Jour.*, 3 Sept.

PERSONAL OBSERVATIONS ON THE EHRLICH-HATA "606."

Abraham L. Wolbarst, New York, states that it is too early to make any positive statement on the value of this preparation in syphilis and parasymphilitic conditions. It seems to offer the possibility of an earlier removal of the initial lesion than by any means hereto known, except incision. Secondary lesions usually disappear within from several days to two weeks. Gummata that have resisted mercury and iodides for years have disappeared in from three to six weeks. The results are not so brilliant in the parasymphilitic conditions and nerve lesions of syphilis.

In the majority of cases the Wassermann reaction changes from positive to negative after six or eight weeks. A gain in weight is a constant effect in some cases. After reporting seven striking cases that he had observed, the author concludes that "606" is apparently the most potent and effective remedy that science has yet produced for the treatment of these diseases.—*Medical Record*, Oct. 15, 1910.

SALE OF EHRLICH'S "606."

Our readers will be interested to learn that we have received a communication from Professor Paul Ehrlich, of Frankfort, informing us that the dioxydiamidoarsenobenzol preparation, termed by Ehrlich "606," will be for sale in Germany on November 1st, through Farbwerke Hoechst., and in the United States and Canada by the same date through Victor Koechl and Company, of New York.

We again direct our readers' attention to the inventor's warning to follow implicitly his instructions as to dose and use. The remedy should not to be used in every case of syphilis. In the instructions which accompany every tube of "606," Ehrlich states that it should only be used in syphilitics who have no organic lesions and who show no mercurial effects. We have spoken of "606" editorially in our issues of August 20th, 27th, and September 3rd. A very explicit description on the method of administration and of the results produced is to be found on page 452 of our issue of September 3rd, by Dr. Wilhelm Wechselmann, of Berlin, whose article is the only authentic publication based on actual clinical experience which has so far appeared in the medical journals of this continent.—*N. Y. Med. Jour.*, 17 Sept.

PERSONAL AND NEWS ITEMS.

ONTARIO.

Dr. F. N. Hughes, of Haileybury, was a patient in the Toronto General Hospital a short time ago and was operated on for appendicitis.

The Misses O'Hara, trained nurses, have decided to erect a private hospital at a cost of about \$5,000 at Westport, near Brockville, Ont.

The Daughters of the Empire, of Guelph, propose having a Tag Day during the Winter Fair in aid of the Tuberculosis Sanatorium.

Dr. Fred Winnett, who went to England with the Queen's Own, and was taken ill with typhoid fever, has recovered and returned home.

Dr. G. G. Nasmith has been appointed chief of the bacteriological laboratory for Toronto. This will prove an excellent appointment. He is to receive \$3,000 a year.

Sir James Grant, M.D., of Ottawa, has been elected a permanent member of the Committee of the International Congress of the School of Hygiene.

The late John Roberts, a blacksmith of Toronto, bequeathed to the Protestant Orphans' Home, the Hospital for Incurables, and Hospital for Sick Children, each the sum of \$695.

It is rumoured that the Ontario Government will give \$100,000 to the Western University at London if the institution raises an equal sum. This is London's chance. The city should move quickly.

Hamilton will have a chance to vote \$35,000 for a new hospital site. Miss Lewis has \$6,000 of the \$12,000 needed for a children's hospital.

Dr. W. H. Barber, Assistant Superintendent of the Rockwood Asylum Kingston, is leaving to go into a private sanitarium near Allandale.

Dr. L. L. Palmer, who has practised in Toronto for over 30 years as a specialist in eye, ear, nose and throat work, has gone to live in Grimsby, where he has built a residence. He recently passed through a severe illness, but has regained his health again.

The Trustees of the Muskoka Cottage Sanitarium has issued an appeal for \$80,000 to wipe out debts that have accumulated against the institution due to the many cases that have been cured for free or below cost.

Dr. Helen MacMurchy, of Toronto, represented the Ontario Government, at the Annual Convention of the American Association for the Prevention of Infant Mortality, at its recent meeting in Baltimore.

Dr. Mason, of Lindsay, was seriously injured on the 24th October. His horse took fright at a dog and ran away. The doctor was thrown out of his rig and dragged for some distance by his foot which was caught in one of the wheels. He was rather cut about the face.

Dr. J. F. Moher and J. C. Mitchell of the asylum staff of Brockville, who have been transferred, the former to Cobourg, and the latter to Hamilton, were honored on 29th October by each being presented with a silver tray illuminated.

Mr W. J. Gage has offered five Scholarships of \$100 each to students who make a special study of tuberculosis at the Gravenhurst Sanitarium. It is expected that students will avail themselves of this offer next year.

The annual meeting for the Home for Incurable Children was held on 3rd November. The ward which Rev. Dr. Elmore Harris established as a memorial to his late wife was opened. There was a balance of \$260 on hand, and \$1,300 is required to pay off the laundry which has been erected.

Dr. C. A. Hodgetts, of Ottawa, the Medical Health Officer of the Conservation Commission, fell down the stairs in his house on 31st October and fractured two ribs and sustained severe contusions on his head. No serious results is feared, however, and it is expected the doctor will soon be around again.

A man came to Toronto on the 28th October, from Sebringville, for treatment for rabies. He was bitten by a suspected dog 48 days before he began treatment. Other dogs were inoculated from the one which bit him, and developed true rabies. This fact induced him to have the Pasteur treatment.

From the report of the Muskoka Free Hospital for Consumptives it appears that the total cost of the institution for the year was \$63,000. There are about 104 patients who pay nothing for their maintenance, while some 30 others pay only from \$2 to \$4 a week. This entails a heavy loss and calls for support from the generous.

Dr. A. R. Harvie, of Orillia, while out hunting, was mistaken for a deer and was shot through the left arm. The bone was badly shattered. After an arduous journey his companions succeeded in bringing him home to Orillia. Dr. N. A. Powell, of Toronto, who was with the party, gave him excellent attention. So far, Dr. Harvie is doing well.

The Oxford Medical Association held its meeting in Woodstock on 21st October. There was a good attendance of the medical practitioners of Woodstock and the County of Oxford. Dr. Primrose, of Toronto, was the guest at the banquet and gave an address on the treatment of surgical affections of the lymph glands of the neck. The meeting was one of the most successful in the history of the Association.

The annual meeting of the Toronto Infants' Home was held on 28th October. Hon. W. J. Hanna presided. The ladies stated that there was urgent need for money to carry on the work of the Home and keep pace with the demands made upon it. Hon. Mr. Hanna said an effort should be made to place the children in homes where they would

be cared for. An effort will be made to raise an endowment fund of \$100,000.

The formation of the Canadian Public Health Association was completed at Ottawa, on 13th October. Sir James Grant was elected Honorary President, Dr. Starkey, of Montreal, is the President, Mayor Lorne Drum, Ottawa, is Secretary, and Dr. G. D. Porter, Toronto, Treasurer. It is hoped that a permanent national council of health will be established. Additional aid for the prevention of tuberculosis will be also sought for.

Territorial members of the Ontario Medical Council have been elected by acclamation as follows:—New members—Dr. G. R. Cruickshanks, Windsor; Dr. A. B. Welford, Woodstock; Dr. Alex. D. Stewart, Fort William; Dr. T. W. G. Young, Peterboro'. Members of last Council—Dr. J. McArthur, London; Dr. T. W. Vardon, Galt; Dr. H. S. Griffin, Hamilton; Dr. W. H. Merritt, St Catharines; Dr. R. J. Gibson, Sault Ste. Marie; Dr. Alex. D. Stewart, Fort William; Dr. J. S. Hart, Toronto; Dr. H. Bascom, Uxbridge; Dr. W. Spankle, Wolfe Island; Dr. J. Lane, Mallorytown, and Dr. M. O. Klotz, Ottawa.

London, Nov. 17.—Nearly 100 students of the Western Medical College were suspended indefinitely this morning as a result of the war that has broken out between the first and second year men. The first year men, confident in their large numbers, were too haughty to the sophomores, and the trouble has caused a pitched battle, in which many were put through the windows. When the term started the faculty, as a result of former troubles, made the men sign an agreement not to do any hazing or have initiations, under penalty of losing all their fees and their year. The boys are now parading the streets in high glee, and say they will get jobs in the local factories until they are taken back.

QUEBEC.

The typhoid fever mortality in Montreal for the year 1909 per 100,000 was 53. This is decidedly high.

The trustees of the Foundling and Baby Hospital of Montreal will erect a new building at a cost of \$100,000. The present building is too small as 350 cases were refused last year.

A case of cholera was suspected on board the S. S. Royal George, at Quebec. Dr. J. G. Adami, of Montreal, was sent to investigate the case.

Dr. Grenfell is doing a wonderful work along the coasts of Labrador. What he tells us of the diseases and hardships of the people who inhabit these icy regions is most interesting. He is a doctor, hunter and explorer. He is a real medical hero.

The Montreal Association for the Blind are endeavouring to raise \$100,000 to provide an institution for the English speaking blind with the object of teaching them to be self-supporting. Already a considerable sum has been secured.

Prof. David P. Penhallow, who has filled the Chair of Botany in McGill University for over 30 years, died on 26th October, on board the Steamer Lake Manitoba. As Professor of Botany in the McGill University for the past 30 years, he had much to do with the medical students of that College, and was highly esteemed by them. He was a good teacher and a charming friend. He was in his 66th year.

WESTERN PROVINCES.

Winnipeg had a death rate of 38 per 100,000 from typhoid fever during the year 1909. It is pretty certain that the water supply is bad when the death rate rises to 20 per 100,000.

The Government of Saskatchewan has taken the view that one employed in the Department of Public Health should not engage in practice.

The Methodist denomination is going to establish a large university at Regina. It is understood that Prof. W. W. Andrews, Dean of the Science Department of Mount Allison University, Sackville, N.B., has been offered the presidency of the new university.

The Council of the College of Physicians and Surgeons of the Province of Saskatchewan has been called upon by the *Saskatchewan Medical Journal* for some time to give an account of the funds of the College. According to the latest issue of the journal to hand, the call has not yet been answered. The council was organized in July, 1909. Since that date there has been no report of any kind, nor has there been issued a register as required by statute.

The Brandon Asylum, Manitoba, was destroyed by fire on the night of the 4th November. In the short time of eight minutes the patients were all out. The fire began shortly after 5 p.m. and very few of the inmates were in bed. This was most fortunate. The loss is \$500,000 against which there is an insurance of \$250,000. There was a terrible scene of confusion for a time. Some swore, some wept, some looked on in an unconcerned manner, while some helped in the work of rescue. There were 600 inmates in the asylum at the time of the fire. The patients were temporarily housed in sheds and barns which were heated by stoves.

FROM ABROAD.

In the United States for the year ending June, 1910, there has been injured on the railways 82,374 persons, and 3,804 were killed.

Dr. De Forest Willard, of Philadelphia, the distinguished Orthopedic surgeon, died 14th October, in his 65th year. He was a noted author and a well-known philanthropist.

During the first half of 1910 it is officially announced that the births in France exceeded the deaths by 21,189. During the year 1909 the deaths exceeded the births by 28,205.

Sidney Ringer the author of a well-known work on therapeutics, died at his home in Yorkshire at the age of 76. He held many important medical offices in London.

It is proposed to raise the sum of £250,000 in Scotland as a tuberculosis fund as a memorial to the late King Edward. The press is giving the movement active support.

In some parts of Michigan smallpox has become very serious. Compulsory vaccination has been ordered. The disease has seriously disturbed business. There have been a number of deaths.

Harper Hospital in Detroit is to be replaced by a splendid new one to cost \$600,000, the gift of four citizens. It is to be noiseless and modern in every way.

A National Memorial Fund is to be raised for the late Miss Florence Nightingale. It is proposed that the fund be used for the relief of nurses who through age or ill-health require assistance.

The Royal Society of Medicine, London, is trying to raise about £50,000 for its proposed new building. Of this sum about £10,000 has been already secured.

Professor Miguel Bombarda, the distinguished teacher of Lisbon, was shot in the abdomen by a former patient. The wound proved fatal. He was a well-known authority on diseases of the brain and nervous system.

"Ether Day" at the Massachusetts General Hospital has become a well-established event. It is held in memory of Morton who discovered ether, and on the anniversary some person of eminence delivers an address.

The Carnegie Hero Commission has awarded a silver medal and a pension of \$30 a month to the mother of Nurse M. K. Brown, who lost her own life in preventing a delirious patient from shooting herself. In the struggle the nurse was shot.

Henri Durant, the founder of the International Red Cross Society, died at Heiden, Switzerland, on Sunday, 30th October, aged 82. He spent his fortune on Red Cross organizations. The Nobel Prize awarded him enabled him to spend his old age in comfort.

Sir Robert Boyce has reported that yellow fever has been endemic along the West Coast of Africa. He claims that many cases that have been called malaria are really yellow fever. It is the *stegomyia canopus*

that spreads the disease, and that this is a variety of the mosquito that is easily destroyed.

Many will learn, with regret, of the death of Dr. John V. Shoemaker. He took a very active part in medical education in Philadelphia and was a prolific writer. He was a noted dermatologist and was the author of a well-known work on therapeutics. He died on 11th October at the age of 58.

Dr. Frederick Holm Wiggen, a well-known New York physician, died 29th October, in his 57th year. He was born at Kingston-on-Thames, England, and educated in Britain. He once held the presidency of the New York State Medical Society, and was secretary of the Judicial Council of the American Medical Association.

The American Society of Medical Sociology has been formed. R. Jacobi, M.D., LL.D., is honorary president; W. J. Robinson, M.D., president, and A. C. Jacobson, M.D., secretary. The object of the Society is to study medical questions that specially bear upon economic conditions, as infant mortality, alcohol, cancer, etc.

The National Nurses' Pension Fund in Britain is doing a good work. At a recent meeting it was said that 40 nurses found it difficult to secure employment, and that after it became almost impossible. Over 1,000 nurses are now drawing pensions, and £2,000 was paid out last year in sickness and accident allowances.

In India much attention is being given to the means of preventing ague. The malarial diseases are the cause of much sickness and many deaths throughout India. There is no doubt but that much good will come from these efforts. As a combination of the destroying of the breeding places of the mosquito, and the proper use of quinine there is sure to be much improvement.

Lord Kitchner, speaking at Middlesex Hospital, said that enteric fever in the Indian Army was yielding to improved sanitary conditions. He thought that with a continued effort in this direction and the general use of inoculation, the scourge would be banished from the army. Malaria was still very prevalent and a strenuous effort must be made to control it.

The Woman's Medical College, in the Punjab, India, is doing very good work. Dr. Mary Riggs Noble is at the head of the institution. There is an excellent staff of lady teachers, and the school has access to the women and children patients in connection with it. All denominations are admitted including Hindus and Mohammedans. There are auxiliary committees in London, Dublin, Edinburgh, New York, and Toronto.

Dr. Grossrich has devised a method of skin disinfection with iodine that has given good results. Prof. F. König, of Altona, and Dr. W.

Müller, report their results. The part to be operated upon is washed and shaved. Next day the part is painted carefully with a 10 per cent. tincture of iodine. About 15 minutes later, when the patient is anaesthetized, the part is painted again. When the operation is finished and the stitches inserted, the incision is painted before the dressings are applied. It is claimed that this method secures absolute freedom from skin sepsis.

The *British Medical Journal*, of 8th October, speaking on "Woman's Sphere in Medicine," said: "The eventful outcome of the woman doctor movement still remains to be seen; meantime we are disposed to believe that the time at which the true sphere of women in medicine can be safely assessed has not yet arrived. But there is one thing which can be already said with assurance: They make not only very intelligent, but pleasant and admirably loyal colleagues. If the degree of *esprit de corps* habitually exhibited by medical women were universal among men, the difficulties of the medical profession in holding its own against organized bodies of the public and government and municipal authorities would be infinitely lessened."

OBITUARY.

LAWRENCE RYAN, M.D.

Dr. Lawrence Ryan was a graduate of London University and Dublin Medical College. He was a distinguished student and served in the London hospitals. He was for some time Medical Health Officer for Edmonton. This position he lost through his indulgence in drink. He went to Saskatoon and became intoxicated and was placed in the lock-up where he died, 13th November. At the time of his death he is said to have been ill with typhoid fever in addition to his indulgence in drink.

LEONARD LUTON, M.D.

Dr. Leonard Luton, one of the oldest medical practitioners in St. Thomas, Ontario, and who has been prominently identified with educational, municipal and other affairs, for the greater part of his life, passed away at his home on 2nd November. The doctor had been in failing health for some time past.

Dr. Luton had lived in Elgin County all his life. He was born in Yarmouth on Feb. 5, 1835. He was engaged in the teaching profes-

sion for several years. He was appointed local superintendent of schools in East Elgin. In 1865 he went to the Hannemann Medical College at Chicago, and two years later he commenced practice as a physician in St. Thomas. He was appointed a member of the Board of Examiners of the College of Physicians and Surgeons in 1885, '86 and '87, and elected a member of the Council, College of Physicians and Surgeons, in 1890, a position he occupied till the time of his death. He was president of the Council in 1898, he was appointed physician and surgeon to the Elgin House of Industry in 1875. In 1895 he was appointed coroner in and for the County of Elgin. These two last named offices he also held at the time of his death. Dr. Luton was a member of the City Council for five years as alderman, retiring in 1905. During that time he was chairman of the Board of Health for two years and president of the Amasa Wood Hospital Board of Governors. The deceased is survived by his widow, and two sons, Dr. Lionel S. Luton, of St. Louis, Mo., and Dr. Irwin L. Luton, Detroit, Mich.

GEORGE EMERY, M.D.

Dr. Emery, of Ottawa, died after a short illness, in his 44th year. He was following special practice. It is said he suffered from gastric ulceration.

BOOK REVIEWS.

APPLIED ANATOMY.

The Construction of the Human Body Considered in Relation to its Functions, Diseases, and Injuries by Gwilym G. Davis, Associate Professor of Applied Anatomy, University of Pennsylvania; M.D. Universities of Pennsylvania and Guettingen; member of the Royal College of Surgeons of England; Surgeon to the Philadelphia General Hospital; Fellow of the American Surgical Association; Member of the Society of Clinical Surgery; Member of the American Orthopedic Association; Fellow of the Philadelphia Academy of Surgeons, the Philadelphia College of Physicians, and the American Academy of Medicine, etc. With six hundred and thirty illustrations, mostly from Original Dissections and many in color, by Erwin F. Faber. Philadelphia and London: J. B. Lippincott Company. Price, \$6.00.

This work is what it claims to be—a work of applied Anatomy. There are very many books on anatomy on the market, treating the subject from almost every standpoint. The present volume is an entirely new one. The main object of the work is to show the relation between structure and function. This aspect of the study of anatomy the author keeps well to the fore. The relation of the surgery of these parts is made most interesting on every page. The text and

the illustrations both combine to show how important anatomy is to surgery. The style of the work is very attractive. Every region of the body is gone over in detail and the surgical diseases and affections of these regions discussed. The methods of operating are laid down with the view that the greatest conservation should exist in the preservation of both structure and function. This sort of book is very helpful to the active surgeon and general practitioner. In this work anatomy ceases to be what too many regard it as, namely, a dry study. The author makes it the very reverse, and clothes the whole study with interest and renders the perusal of the book one of pleasure. The illustrations are well executed. The publishers deserve much praise for the workman-like manner in which they have got out the volume.

GYNAECOLOGICAL THERAPEUTICS.

By S. Jervois Aarons, M.D. Ed., M.R.C.P. Lond., Gynaecologist to St. Anthony's Hospital; Fellow of the Royal Society of Medicine; Member of the Gynaecological and Obstetrical sections; formerly Registrar and Pathologist to the Hospital for Women, Soho Square, Gynaecological Tutor, Extra Mural School of Medicine, Edinburgh; House Surgeon, Gynaecological Ward, Royal Infirmary Edinburgh. With foreword by Sir Halliday Croom, M.D., F.R.C.P., F.R.C.S., Professor of Midwifery in the University of Edinburgh. London: Baillière, Tindall and Cox, 8 Henrietta Street, Covent Garden, 1910. Price, 5s net.

This is a small book of 175 pages, 12 mo. It is got up in a neat and attractive, but plain manner. The paper, binding, typography and illustrations are good. The author has done himself great credit for the judicious arrangement of material which the book contains. So experienced a teacher and practitioner as Sir Halliday Croom says: "To my mind, Dr. Aarons has produced a volume which is of the greatest value. "This book is almost solely on the medical treatment of gynaecological disorders, and it is herein that its unique value is to be found. as most of the books on the market are so largely of a surgical character. It is to often forgotten that gynaecology has a medical side as well as a surgical one. This little book is full of useful suggestions and valuable prescriptions. It is just the sort of book one likes to pick up when one has a few spare minutes and read. It may be opened at any page and something will be found that seems to fit into what the reader has in his mind concerning some patient. This is the sort of book that is bound to be read and its many suggestions put in practice. The author does not content himself by saying that certain things should be done, but goes to work and tells how it should be done. The book is condensed in style and tabular in form. For the various ailments the author gives his prescriptions. This is of very great advantage to the young practitioner who likes to see formulae before him of an experienced person.

PRACTICAL BACTERIOLOGY.

A Text-Book of Bacteriology for Students and Practitioners of Medicine by Philip Hanson Hiss, Jr., M.D., Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, New York City, and Hans Zinsser, M.D., Associate Professor in Charge of Bacteriology, Leland Stanford University, Palo Alto, California. With one hundred and fifty-six illustrations in the Text, some of which are colored. New York and London: D. Appleton and Company. Price, \$3.75. 1910, Toronto: D. T. McInsh & Co.

The science of bacteria is a young one and yet one of the most important. It has important bearings in the medical, sanitary, agricultural, and industrial worlds. The study of bacteria plays an important part in the arts and sciences as well as in medicine. This book gives a clear exposition of what bacteria are and what they are responsible for. The first section of the books takes up the general biology of bacteria and the technique of bacteriological study. This is a scientific section and deals with the life habits of bacteria and how to cultivate and study them. It is a good laboratory guide. The second section discusses infection and immunity. Here the practical side comes well to the front. This portion of the book is intensely interesting to the physician who sees much of infection in general and wishes to know the processes that take place. The sections deal with infection, defensive factors, toxins, autotoxins, lysins, precipitins, agglutinins, sera, phagocytosis, poisons, anaphylaxis, etc. The third section takes up the known pathogenic micro-organisms and the diseases they cause. The fourth section discusses infectious diseases of unknown origin as rabies, smallpox, poliomyelitis, yellow fever, etc. The last section deals with bacteria in the air, soil, water, and milk. The book contains a veritable storehouse of information on bacteria. It is well printed, bound and illustrated. We can speak highly of this work.

 THE PRACTITIONERS' VISITING LIST FOR 1911.

An invaluable pocket-sized book containing memoranda and data important for every physician, and ruled blanks for recording every detail of practice. The Weekly, Monthly and 30-Patient Perpetual contain 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil with rubber, and calendar for two years. Price by mail, postpaid, to any address, \$1.25. Thumb-letter index, 25 cents extra. Descriptive circular showing the several styles sent on request. Lea & Febiger, Publishers, Philadelphia and New York.

Being in its twenty-seventh year of issue. The Practitioners' Visiting List embodies the results of long experience and study devoted to its development and perfection.

It is issued in four styles to meet the requirements of every practitioner: "Weekly," dated for 30 patients; "Monthly," undated for 120

patients per month; "Perpetual," undated for 30 patients weekly per year, and "60 Patients," undated for 60 patients weekly per year.

The text portion of THE PRACTITIONERS' VISITING LIST for 1911 has been thoroughly revised and brought up to date. It contains among other valuable information a scheme of dentition, tables of weights and measures and comparative scales, instructions for examining the urine; diagnostic table of eruptive fevers; incompatibles, poisons and antidotes; directions for effecting artificial respiration; extensive table of doses; an alphabetical table of diseases and their remedies, and directions for ligation of arteries. The record portion contains ruled blanks of various kinds, adapted for noting all details of practice and professional business.

Printed on fine, tough paper suitable for either pen or pencil, and bound with the utmost strength in handsome grained leather, The Practitioners' Visiting List is sold at the lowest price compatible with perfection in every detail.

MISCELLANEOUS.

RADIUM IN THE TREATMENT OF CANCER.

To the Editor of the Lancet:

Sir,—A few weeks ago in the daily papers of this city prominence was given to a press despatch in which it was stated that the International Cancer Conference had delivered themselves very unfavourably as to the use of radium in the treatment of cancer. In view of the reckless and haphazard style in which the average newspaper correspondent does his work I felt sure that the statements made were incorrect and misleading. Reference to the *British Medical Journal* for Oct. 22nd, p. 1267, vindicates my opinion of the unreliable character of the report referred to. The *British Medical Journal* states: "The possibilities of radium were fully discussed without any definite conclusion being arrived at; it seemed that few of the speakers were prepared to employ it, without previously resorting to surgery, in other than superficial lesions. The general impression conveyed by the discussion was that although many speakers employed radium, they had in their possession quantities far too small to enable them to resolve the apparent contradictions they discussed." In other words they did not decide against the curative value of Radium, they did not know much about it anyway and apparently nobody was in a position to use the proper dosage because they had not the radium to do it with. The crux of the

radium treatment is to have enough to meet all requirements and to know how long, in what way and with what filtration it should be used. I am becoming more convinced every day of its curative power when properly applied.

Yours, etc.,

G. STERLING RYERSON,

66 College St., Toronto.

Montreal, November 14th, 1910

John Ferguson, Esq., M.A., M.D.,
Editor, CANADA LANCET,
15 Wellington St., Toronto, Ont.

Dear Sir,—In the November number of your journal under an editorial on Dominion Registration I note the following statement: The degree at McGill and Laval carries with it the right to practice in Quebec. I suppose that this must be a slip of the pen as it is really very far from being the state of the case. Only those of our graduates who have registered with the Quebec Board at the beginning of their course in medicine and have taken the examinations before examiners duly appointed by the Quebec Board, receive the Quebec license. I am writing you this note as my attention has been called upon to the matter by some of our graduates writing to me to know if there has been a change in the Quebec Laws.

Yours very truly,

JNO. W. SCANE,

Registrar.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1911, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered.

Essays intended for competition may be upon any subject in medicine, but cannot have been published. They must be typewritten, and

must be received by the Secretary of the College on or before May 1, 1911.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope, having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award.

The Alvarenga Prize for 1910 has been awarded to Dr. M. Katzenstein, of Berlin, Germany, for his Essay entitled: "The Formation of an Aterial Collateral Circulation in the Kidney."

THOMAS R. NEILSON, M.D.,
Secretary.

ANTIPHLOGISTINE.

Pope said, "The learn'd reflect on what before they knew."

As the winter approaches, conditions prevalent with the season will present themselves for the consideration of the physician.

At this time it might be well to recall that Antiphlogistine, applied thick and hot, will offer unmeasurable relief in those cases of bronchitis, tonsillitis, laryngitis, pleurisy and other throat and chest affections you will be called to treat.

Satisfactory therapeutic results invariably follow the application of Antiphlogistine and to guard against substitution, it is well to specify an original package, thus protecting your patient as well as yourself.

ONE COMMON LUNG BACILLUS.

It is quite generally accepted that pulmonary tuberculosis is caused by a bacillus. Coughs, colds, la grippe and bronchitis come and go, even if we cannot exhibit them as entities under the microscope. It would indeed be a fortunate thing if there were one common lung bacillus, the destruction of which would remove the cause of all respiratory affections. But under the present condition of things we can only meet indications, treat symptoms and trust to nature. In the treatment of throat and lung affections, one remedy of the materia medica stands out more prominently than all others. Codeine has the marked peculi-

arity of controlling coughs and relieving the irritated and inflamed lining of the respiratory tract without arresting secretion. Here it shows its value over morphine. It is not followed by constipation, creates no habit, nor is the mucous membrane of the throat and bronchial tubes made dry. To control the cough and quiet the irritation, at the beginning of the attack, often prevents most serious trouble. There is another remedy which must occur to the mind of every well posted physician as especially applicable to these conditions. The power of antikamnia to reduce fever and thus control inflammation makes it one of the best preventive and curative agents. The combination of two such clearly defined remedies for respiratory affections is most fortunate. They are prepared in the form of "Antikamnia and Codeine Tablets."

PAROXYSMAL ARTERIOSPASM WITH HYPERTENSION IN THE GASTRIC CRISES OF TABES.

Lewellys F. Barker, M.D. (*American Journal of the Medical Sciences*, May, 1910), reports a case of tabes with gastric crises, during which there was a considerable rise of blood-pressure. The patient was a married woman, 49 years of age. The crises were attended by severe pain, which was situated in the upper abdomen and radiated into the back. Vomiting, retching, and severe general symptoms were present. The pain was accompanied by paroxysmal arteriospasm, with great elevation of the maximal arterial pressure. The pressure was over 200 mm. of mercury, but fell at once to 90 mm. after an inhalation of amyl nitrite. That the hypertension depended upon the arteriospasm was evident from the effect of amyl nitrite. As soon as the effects of the amyl nitrite had worn off the hypertension reappeared. The marked oscillations in the pressure during the crises are well shown in the blood-pressure chart accompanying the paper. It was only after the blood-pressure returned to normal, and remained on the normal level, that the symptoms disappeared. A study of similar cases in the literature indicates that partial falls of the pressure are significant only of remissions in the crises, not of termination.

Attacks of severe abdominal pain with paroxysmal hypertension occur in at least three conditions—(1) gastric crises of tabes, (2) lead colic, and (3) the angina abdominis of arterio-sclerosis.

In the gastric crises of tabes it is assumed that irritation in either the posterior roots of the spinal nerves or their continuation within the cord leads to a reflex vasomotor constriction, which is most extreme in the

splanchnic domain. If this explanation be correct, it must be assumed that in tabes we have to deal at times with elective stimulation of posterior root fibres, for when tabetics suffer from pains in the lower extremities the blood-pressure is usually low, and a vasomotor dilatation must be assumed in such cases. In the gastric crises a reflex vaso-constriction must be assumed. It is interesting that lancinating pains and gastric crises rarely occur together in tabes, although their alternation is not uncommon.

Although the diagnosis of tabes was made in the author's case, the knee-jerks were over-active. There was definite analgesia in large areas in the lower extremities. The pupils were very sluggish to light, the lymphocyte count in the cerebro-spinal fluid was markedly increased, and the protein content of the fluid indicated a parasymphilitic disease. The Wassermann reaction was negative. The author also considers that the extensive analgesia and the globus of which the patient complained were hysterical manifestations complicating the more serious malady.

If the severe crises continue, the advisability of cutting intradurally the seventh, eighth, and ninth dorsal nerve-roots on both sides of the body (Foerster's operation) is to be considered. In Küttner's case, and in that reported by Bruns and Sauerbruch, the results were eminently satisfactory.—*Glasgow Medical Journal*, September, 1910.

LIBERAL DIET IN TYPHOID.

In the *Medical Record*, June, there is a discussion of this subject by Clayton. He calls attention to the fact that the ordinary man requires a total food value of 3,000 calories to maintain his equilibrium, so the man suffering from fever with consequent excessive tissue waste requires more. The selection of the diet should depend upon the following:

1. Should represent a food value sufficient to maintain the body equilibrium as nearly as possible under the circumstances.
2. It should be easily digested.
3. It should be innocuous. Neither by its coarseness, bulky residue, gas-producing or other properties, should it have a tendency to cause hemorrhage or perforation.
4. It should be palatable, because it has been shown that this factor has an important bearing upon a food's digestibility.

He gives an example of a patient who entered the hospital weighing 112 pounds, his temperature was normal on the 39th day and he

went out on the 58th weighing 106. His diet on the 22nd day when his temperature was 104.4 was:

| | Amount. | Caloric Value. |
|-----------------------------------|----------|----------------|
| Milk | 38 oz. | 782.8 |
| Toast..... | 2.13 oz. | 266.56 |
| Rice..... | 6 oz. | 192.6 |
| Eggs..... | 4 oz. | 216.9 |
| Butter..... | 1 oz. | 227.5 |
| Sugar..... | 3 drs. | 47.4 |
| White of egg (albumen water)..... | | 16.1 |
| Total | | 1,750.16 |

Comparison of statistics from a number of hospitals show that cases treated in this way make better progress and have fewer complications than those on liquid diet. The diet is determined by the appetite of the patient and by his desire in so far as the articles suit the selection given above.

NEW WORK ON TREATMENT.

W. B. Saunders Company now have going through their presses a three volume work on Practical Treatment, written by international authorities and edited by those able clinicians, Dr. John H. Musser and Dr. A. O. J. Kelly, both of the University of Pennsylvania.

In looking over the list of contributors we can come to one conclusion, namely, that this work will undoubtedly take rank as the very best on Treatment extant. The names of the authors carry with them the positive assurance of thoroughness. Indeed, each chapter is a complete monograph, presenting the most recent therapeutic measures in a really practical way.

As the general practitioner is required to know certain therapeutic measures more or less of a surgical nature, leading surgeons have been selected to present such subjects. This is an important feature, and, to our knowledge, not included in any similar work.

In every case the men have been most aptly chosen for their respective tasks, and under the wise editorship of Drs. Musser and Kelly there has been produced a work on Treatment that will remain for many years the last word—a source of practical information, easily obtained and readily digested.

The work will sell for \$6.00 per volume, in sets only.