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## ❖ Original Contributions ❖

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### THE MEDICAL MAN AS A WITNESS\*

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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 judge, as plaintiff, as defendant and as 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

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

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 a court—what is a court?

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 it 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 the 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 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 a 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 per-

sons 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 the 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 questions 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 being 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 performances of medical witnesses.

It is not wholly unjust. There is—there can be—no doubt that the extraordinary antics of some called as 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 "adjective" 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 agreed 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 caron: 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-governed church—they *knew*—the knowledge was a part of their very soul—that the Bible did not justify bishops. And while Riddell 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 on 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 Islamite  
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 pure-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 desire 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 eye or mislead the soul. "*Quatuor sunt genera Idolorum quae mentes humanas obsedent . . . 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 Idolum 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 sententiæ*," "So many men, so many minds"; or, as Terence has it, "*Tot capita, quot sensus*," "So many heads, so many opinions," or do you prefer Cicero, "*Quot homines, tot causæ*" ? (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 in answer 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 witnesses 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 a witness' testimony than an obvious desire to fence or to spar for 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 is 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*, answer 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 punished, but should be treated for the disease. That is not for the doctor, or, indeed, for the judge either—it is for 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 proportion 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 a 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 wit-

ness. 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 humerus." 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 exception:—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 a 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 affect 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 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 de-

tail, 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 many 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, relig-

ious, 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 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 that 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 wrongdoing 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 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, however, 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 retained 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. Judges 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. Wherever 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 not 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 evi-

dence 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 happened 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 appealed 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 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, dressmaking, 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 brethren? You have now a Council elected: and it seems to me that I have somewhere heard that it is just 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 ap-

plied 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 had been drinking of the waters of sweetness when he said, "For doctors to enter a 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 extended or 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 its 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 account 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 an 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 far 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 fair 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 reluctancy 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 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, *secun-*

*dum 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.

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## THE USE OF CARBON DIOXIDE SNOW IN SUPERFICIAL LESIONS

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BY DR. HARVEY J. TODD.

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Carbon dioxide snow was first introduced to therapeutics by Pusey, of Chicago, a few years ago, and since then has been of great use in combating numerous skin diseases and disfigurements.

Dr. E. Reginald Morton, London, writes: "In solid carbon dioxide I consider that we have the most important therapeutic discovery of recent times, not excluding that remarkable substance, radium."

The temperature of solid carbon dioxide is 79°C., and so has the effect of freezing almost instantaneously any tissue to which it is applied. The extremely low temperature very

quickly blanches the tissues, followed by rigidity and swelling of the part frozen. After the application is stopped, the tissues act as if frost-bitten, the part becomes red and swollen, and a small vesicle forms. On examining the part treated, it is found that we have produced an area of plastic inflammation without any gross destruction of tissue.

Within a few days the vesicle shrinks and a crust forms, which should be allowed to separate itself, which generally occurs in from eight to fourteen days, leaving a smooth, soft, elastic, pink scar, which gradually becomes quite pale.

In cases of capillary nevi, practically all can be cured by one application of carbon dioxide ice of forty seconds' duration. Some few cases need two or perhaps three applications. Cavernous nevi react very readily. Port wine marks generally require two or three treatments, but the results are excellent.

In lupus vulgaris the results are apparently all that could be wished for, also in epitheliomas; but, of course, time may change our views.

Other lesions favorably affected by carbon dioxide are keratoses, leucoplakia, keloid, senile and other warts, moles, venereal warts, and gunpowder stains.

Gottheil says: "In lupus erythematosus it surpasses all other forms of treatment." The application of solid carbon dioxide is from ten to forty or forty-five seconds, and is quite, or almost quite painless. If gross destruction of tissue and necrosis is wished for, the application should last for one minute, or even longer, with firm pressure of the ice to the part.

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## TYPHOID FEVER FROM MILK AND OTHER FOODS

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MANY sanitarians think that, in discussing the etiology of typhoid fever, attention appears to be directed rather exclusively to polluted water. It is doubtless true, that, in the vast majority of cases, the bacilli of Eberth are swallowed; but, in a good many instances, the infection does not reach the consumer's stomach in a draught of water. Milk may be polluted by water used to cleanse milk cans, or for diluting purposes, or the infection may be transferred to milk by the hands of milkers or other employees in a dairy.

As the surgeon, who operates with unclean hands, inoculates his patients with pyogenic organisms, so milkers, by transferring typhoid bacilli from their hands to milk, inoculate the customers of the dairy with typhoid fever. Fecal matter has frequently been found under the free borders of the finger-nails of milkers who thought their hands were clean. Milkers should be obliged to keep their nails short, and to use the nail-brush so as to remove the dirt from the recesses about their nails, which are not accessible to soap and water, in the ordinary washing of the hands. Any person, nursing or attending a case of typhoid fever, should be forbidden, under penalty, to milk cows. Neither should a dairyman, in whose dairy a case of typhoid fever is nursed, be allowed to

sell milk. The drinking water of a dairy should be regularly tested for fecal pollution.

As physicians in Ontario are now obliged by law to report their typhoid cases to the Secretary of the local Board of Health, who shall in turn report them weekly to the Secretary of the Provincial Board of Health, the infection of the hands of milkers in dairies will not do so much mischief in the future as it has done in the past. Still, it is practically impossible to keep track of all cases of typhoid fever, occurring in the area from which the milk supply of a large city is derived. Especially is this true in mild cases and in ambulant cases. Carriers of typhoid fever, who appear to be in good health, also help to increase the difficulties of the situation.

The pasteurization of milk, which consists in raising it to a temperature of 158° F., and maintaining it at this temperature for thirty minutes, should be a safeguard against typhoid infection from milk, as it removes all pathogenic and the bulk of the non-pathogenic organisms. It would certainly be preferable to pasteurize all milk, rather than give up the use of milk altogether, as there is no other food which can take its place.

Milkers are not the only transmitters of the Eberth bacillus to food, and a bright light was thrown on the etiology of some cases of typhoid fever in Chicago last summer by Dr. L. L. Lumsden, of the Public Health and Marine Hospital Service (U.S.A.) (*vide The Chicago Medical Recorder*, October 15, 1910).

Dr. Lumsden, who, in the course of an investigation lasting three months, visited every known case of typhoid fever in Chicago, found that, in many of the cases, the cause was directly traceable to contact with previous cases. The infection was produced by swallowing the excreta of the patients, which were allowed to lodge upon the bedding, napkins or hands of attendants, and by them introduced into the food supply, or beverages, of persons living in the same house. The conclusion to be drawn from these observations is that, in many cases, the germs of typhoid fever are HANDED OUT by persons, who, while nursing or attending on patients sick with typhoid fever, meddle with or handle the food supply or beverages of the well.

J. J. C.

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#### OPERATIVE TREATMENT OF SIMPLE FRACTURES

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THE operative treatment of simple fracture of the patella has been practised, for many years, with great advantage to the patients. The effort to secure bony union and a close approximation of the fragments has also induced surgeons to apply operative methods to fractures of the olecranon, and the tuberosity of the os calcis.

Some surgeons go further in their efforts to secure close approximation of fractures and include every one of the long bones, especially if the fragments cannot be kept in apposition by ordinary splints. Dr. F. N. G. Starr (clinic to the profession, Toronto

General Hospital) goes still further in his advocacy of the operative treatment of simple fractures, so far, indeed, as to say, that a surgeon who does not *plate* a simple fracture of a bone, is guilty of criminal negligence.

In objection to the plating or wiring of fractures, it is contended, that an incision in the soft parts—involving danger of sepsis—is required, that it is difficult to keep the tracts in which the metal supports are placed in an aseptic state, that the screws or wires cause rarefaction of bone. From his own experience, Dr. Starr refutes the charge that rarefaction of bone is caused by the presence of screws in bone. Neither has he found that septic conditions arise from the presence of steel plates and screws in fractured bones. The danger arising from an incision in the soft parts he did not mention, taking it for granted, probably, that, if the operation was properly done, and the tissues efficiently guarded, no septic results would follow.

A good many surgeons think that, in the majority of simple fractures with marked displacement, good results are obtained if an anesthetic is given during the reduction of the fracture, and sufficient extension is maintained after its reduction. Even if this be true in the main, it must be conceded, that the evidence of marked deformity in fractured bones, treated by old-time methods, as seen in museums of surgery, or observed in skiagraphs printed in surgical works, proves that there are many notable excep-



tions to the rule. Certainly, when studying specimens of deformed human tibiae or femora, one cannot help feeling, that a steel plate fastened with screws, or a deftly inserted loop of wire, would have prevented such surgical catastrophes. J. J. C.

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**POLLUTION OF WATER SUPPLIES IN CANADA AND THE UNITED STATES**

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DR. CHAS. A. HODGETTS, Medical Adviser of the Commission of Conservation, dealt with the pollution of water supplies in a paper read before The Dominion Public Health Conference, Ottawa, October 10, 1910. Data were given showing the typhoid mortality rates, per 100,000, of Canadian cities, bordering on the Great Lakes, and also the typhoid mortality rates of twelve cities of the United States, located on the Great Lakes. These rates are high in both countries, much higher than the rates of densely populated countries in Europe, such as Scotland, Germany, Australia, Hungary, Belgium and England and Wales.

To effect a reduction in the high typhoid mortality rate in Canada, Dr. Hodgetts argues, that efficient laws should be enacted, the enforcement of which should in the main rest with a Federal department, co-operating with each of the various Provincial Departments of Health.

As indicative of the international character of the evils of water pollution, Dr. Hodgetts points out that the waters of the St. Lawrence, which at Montreal should be comparatively pure, are polluted, not only by Canadian municipalities, but also by the acts of residents in the States of New York, Michigan, Ohio, etc., who wantonly pour millions of gallons of sewage daily into the waters of the Great Lakes. Hence, even if every Province in Canada had a similar or identical law repressing the pollution of its water supplies, the dangers, respecting waters which are in part international in origin or location, would not be entirely removed. Another international feature of the case is the pollution of the Great Lakes during the season of navigation, when as many as ten million persons travel on the ships, which ply on these waters.

Brief references were made in the paper to those States of the United States and to European countries, in which advanced laws are enforced to restrain the pollution of water supplies, *viz.*, Massachusetts, Pennsylvania, New Jersey, New York, Ohio, Kansas, Great Britain, Germany, Prussia, Saxony.

A special word of approval was given to the Act Respecting the Public Health of Saskatchewan, section 23 of which provides, that the consent of the Commissioner of Health shall be obtained before any by-law providing for the raising of money for the construction, operation or extension of any system of water works, common sewer, system of sewerage or sewage disposal shall be voted upon by the rate-

payers, and that no debenture shall be valid, unless this provision has been complied with.

The corrective power held by the Commissioner of Health of Saskatchewan will, it is hoped, prevent municipal councils in that Province from taking the bit between their teeth and introducing systems of water supply, sewage disposal, etc., without first obtaining the consent of the Provincial Commissioner of Health.

Should the above provision of the Saskatchewan Public Health Act prove workable, the result will be hailed with satisfaction by the Legislatures of Canadian Provinces and American States, who desire to secure for the people the best, both in water supplies and in sewage purification.

As far as Canada is concerned, it is probable that, when the individual Legislatures do their duty in passing sound laws restraining the pollution of streams and water supplies, and likewise co-operate with each other, in the furtherance of such sanitary purposes, much less pollution of water supplies will be observed in this country.

The same method of procedure should apply to the Legislatures of States bordering on the Great Lakes, who are as interested in maintaining the purity of these unsalted seas as are the Canadians.

J. J. C.

**MEDICAL EXPERT EVIDENCE**

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OF the making of laws, there is no end. The observance of them is "a moveable feast," it would seem, according to the fancy or frenzy of the public mind, diseased or otherwise. As the body of man, or, to more correctly express it, his physical condition, has frequently such an effect upon his choice of words, or deeds, Law and Medicine must put him, often, in the middle and on each side take a guiding hand and lead him just where and how he ought to go. So in our courts of law, when important points hinge on expert medical testimony, again Law and Medicine must join forces, each offering in tablet form the condensation of years of study and experience.

The question of medical expert evidence has been discussed a good deal of late, not only in professional circles, but by the laity. Perhaps never before has the medical man who appears in court as an expert been the subject of as much discussion as at the present time. A recent case of alleged insanity was argued at Osgoode Hall. At the trial the battle royal, we regret to term it, was between six medical men, three of whom swore that the man was a lunatic and unfit to contract a marriage, and an equal number of men just as well versed in psychiatry swore that his case was one of senility only. Then did the public talk, and one heard on every side derogatory remarks as to medical evidence in general. The public are not

to be blamed for taking this stand, as, at first sight, it would appear as if there were a good deal of truth in their opinion.

To see medical men appearing in court taking sides, one seemingly swearing exactly the opposite to the other, is, to say the least of it, undignified and does not tend to the upholding of Medicine as a learned profession. It gives the laity the idea that there is nothing certain in our profession, creates a sense of doubt, and causes lack of confidence.

To digress for a moment, the old, trite saying, "Doctors differ," has attained, we fear, its truthful place as a stock phrase and never calls for the use of the prompt-book. Medicine is, of course, a progressive rather than an exact science. Now, doctors, if they are worth the degrees they hold, study, read, experiment and try to make the Medicine of to-day more and more exact. As long as this old world keeps swinging around there will be the wise and otherwise men in every profession and business. Also there will always be physicians, with sorrow we say it, who think more of themselves and their empty pockets than they do of the honor of their calling in life.

To return directly to the subject of expert medical testimony, friendship or political bias too often make the choice of so-called medical experts an unfortunate one. Only a month ago a lawyer foremost, at least he thinks he is, in the front rank of his profession in Toronto, stated in the hearing of a number of men

that he liked to have Dr. Blank in the witness-box. He looked so fine and imposing and said just what he was told. If that is the standard of men the lawyers want, then the sooner medical expert testimony is abolished the better.

As to real difference of opinion, that should not be lightly spoken of. First, there is always the honest candor of absolute ignorance; then there is diversity of opinion, as in the recent case above referred to, caused by the moods of the patient when examined. To a doctor of a genial, sympathetic temperament, who understands human nature and chats pleasantly along, the patient responded and was better than his normal best. To a physician of a different type of personality, who, for instance, peremptorily ordered him to tell things and put out his tongue, he showed his worst side, and so it seemed a riddle hard to solve as to his condition being one of insanity or senility. So in the end the honorable Judge formed his own opinion and gave judgment accordingly.

Two scientific men may rightly differ in the views they hold on any subject without being unjustly criticized. The Hon. Justice Riddell recently addressed the Academy of Medicine, and we feel honored in presenting his address to our readers in this issue. It is well worthy of careful perusal. As to what His Lordship says regarding the rights of a witness under examination it is true that some judges do not afford requisite protection to the witness in the box where the counsel on cross-examination tries to insist

upon an answer "Yes" or "No." If more witnesses would follow the suggestion of Mr. Justice Riddell and appeal to the Bench when they find that they would convey an improper impression by answering "Yes" or "No," they would frequently find themselves in a less awkward position. As to the best means to be adopted to cure the situation, we have always felt that the appointment by the Crown, say once every five years, of a triumvirate of medical men, who are of unquestioned scientific, especially medico-legal, and professional standing, would be wise. Under a retaining fee they would be always ready to advise the Crown and its appointees on all medical and medico-legal matters and appear in court whenever needed. It is true, perhaps, that those appointed might not meet with the approval of all politically, religiously or professionally, as that would be well-nigh impossible, but surely three men could be named for a county whose truthfulness would be impugned by none. We feel that such a Medical Commission would be a distinct advance on the present state of affairs. Of course what Mr. Justice Riddell states is true—that the one and only way to set matters permanently right is for medical experts to firmly make up their minds to be absolutely impartial, in other words, honest in the views expressed. Let them refuse to be swayed by the views held by either counsel, giving the case careful consideration beforehand, be entirely independent, and then state their views, no matter whose head may

fall in the basket. Of course the day has not arrived when all members of any profession can be expected to be of absolutely one mind; but if the majority would take the stand that "Truth is truth and right is right," be fearless and honest at all hazards, the trimmers would soon have to

"Fold their tents, like the Arabs,  
And silently steal away."

W. A. Y.



	<h2>Editorial Notes</h2>	
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### The Typhoid Fly

The prevalence of typhoid fever among Europeans in India has been attributed to the agency of flies, since, year by year, outbreaks occur, which are most difficult, or impossible, to trace to a water-borne cause, the water supply being, in many cases, above suspicion.

During the Spanish-American war, investigation of the great prevalence of typhoid fever among soldiers, camped in the Southern States, showed that abundant opportunities existed for the conveyance of typhoid infection by flies, the insects visiting the latrines at one time and the men's tables at another. According to this view, flies picked up Eberth bacilli, which had been discharged into a latrine, and subsequently deposited them on food eaten by the soldiers. There would be a special danger of infection, if any of these typhoid flies were to drop into milk, which is an ideal culture fluid for the bacilli of Eberth. A few germs, washed from the body of one fly, may develop into millions within a few hours, and the person who drinks such milk will receive a large dose of typhoid bacilli, which may later cause serious sickness.

A brook, a river or a lake, receiving discharges from house sewers, furnishes typhoid germs, and flies in millions settle on the refuse that washes along the water's edge. Afterwards, these same flies enter neighboring houses, and wipe their feet on the food which the inhabitants of these houses eat, or on the faces of sleeping children. Thus, flies, which are carriers of typhoid fever, bring their cargo in contact with human beings. As a general proposition, it may be held, that typhoid fever cannot be got, unless the germs of that disease are swallowed, and one does not swallow the germs, unless they are deposited on the food

eaten, in the liquids drunk, or on the glasses or cups used for drinking.

### **Disinfection of the Skin by Iodine**

Disinfection of the hands of an operating surgeon may be accomplished, more or less successfully, by diligently scrubbing them with soap and water, followed by immersion in a solution of corrosive sublimate, 1—1,000. The use of sterilized rubber gloves by the surgeon is an easier and probably more effective procedure. Grossich's method of disinfecting the patient's skin by iodine continues to receive notices in the medical press. It is applied as follows: On the day before the operation, provided there is no urgency, the patient is bathed and shaved. As soon as the patient is brought into the operating theatre, on the following day, the area of the skin involved is energetically painted with a 10 per cent. tincture of iodine. About fifteen minutes later, when the patient is asleep, a second painting is performed. Five minutes later, the operation begins. When finished, after the skin has been sutured, the incision is painted with the iodine tincture, before the dressings are applied.

Owing to the rapidity with which iodine acts on living tissues, the time between the painting and the commencement of the operation may, if necessary, be shortened. Müller, who writes about the disinfectant powers of iodine, in *Deut. Med. Woch.*, Aug. 25, 1910, says that this method of disinfecting the skin of the patient may be carried out in any place, in a few seconds; that it becomes active in a few minutes; that it can be applied successfully in all kinds of wounds, infected or otherwise, and that it is so simple that an untrained attendant can apply it.

It is certainly reassuring to learn that, if a surgeon applies a 10 per cent. tincture of iodine to an area of skin soiled by a machinery accident, he can incise the skin and afterwards suture it, with a hope of obtaining union by the first intention. One

feels inclined to ask Müller why, if such good results flow from the application of a 10 per cent. tincture of iodine to the skin of the patient, equally good results in disinfection would not flow from painting a 10 per cent. tincture of iodine on the hands of the operating surgeon. Assuming that the mechanical cleansing of the operator's hands with soap, warm water and scrubbing brush has been done adequately, the painting of his hands with a 10 per cent. tincture of iodine would be somewhat similar to soaking the hands in a 75 per cent. alcohol. The strong alcohol of the tincture of iodine penetrates the skin, while its iodine content is powerfully antipyogenic.

#### **Hygienic Suggestion in Post-Offices**

As teaching by suggestion is in keeping with modern ideas, one notices with satisfaction, that stamp-dampers are provided at the wickets of post-offices, where stamps are sold. Stamps sold, according to postal law, with the gummed side uppermost, are relatively clean. After the gummed side has been fingered or rubbed on the post-office counter, it should not be licked by the customer, but should be affixed by the aid of a stamp damper. However, that there is danger to health in the practice of licking stamps is more easily asserted than proved; inelegant and out of touch with hygiene it certainly is. By force of slavish habit, men get used to depositing unclean pipes in their mouths, and when a man buys a cigar, how does he know that it is not one the outside leaves of which were plastered down with the saliva of the cigarmaker? To most smokers the licking of a postage stamp may seem quite a trivial affair. Non-smokers, especially women, may not share this view, though occasionally a laundress holds a clothes pin in her mouth, when both hands are occupied.

Just by making people reflect, the presence of stamp-dampers in post-offices will bring about the better way of affixing stamps to mailed matter. Another plan for doing away with

this habit of licking stamps is proposed by Dr. Symons, in a recent number of the *Medical Officer*. He suggests, that the gum used on stamps might be mixed with some pungent substance, such as cayenne pepper or aloes. The Postmaster-General will certainly hesitate before adopting this last suggestion, though there can be no doubt that, if put into practice, the appealing power of the drugged stamp would soon bring about a general installation of stamp-dampers.

### **Perforation in Typhoid Fever**

Perforation, which is the accident most to be dreaded in typhoid fever, almost invariably produces fatal peritonitis. It occurs more commonly in young males. In regard to frequency, Scott's statistics, embracing 9,713 cases from English, Canadian and American hospitals, give a mortality of 3.6 per cent. from perforation. According to Fitz, who tabulated 4,680 cases of typhoid fever, there is a mortality of 6.58 per cent. from perforation of the bowel.

Usually this accident is easily diagnosed, being announced by the sudden advent of acute pain in the abdomen, followed by the symptoms of collapse. In some cases, however, a practitioner may be thrown off his guard, as the pain may not be severe and there may be no collapse, although diffuse peritonitis following perforation may develop insidiously.

As illustrative of this fact, Professor McPhedran, during the course of a Wednesday afternoon clinic at the Toronto General Hospital, instanced a case of perforation occurring during typhoid fever, in which the only symptom observed, which might appear to have any relation to this lesion, was the sudden advent of slight pain in the hypogastric region. The pain was relieved with an anodyne, but death ensued. At the autopsy, a perforation of the ileum, large enough to admit a pencil, was found. In his opinion, localized pain in the abdomen, occurring suddenly, in the course of typhoid fever, with or without col-

lapse, spelled perforation and called for operative treatment. A patient was shown at the clinic, who had suffered from perforation, as the result of typhoid fever. An early diagnosis had been made, and an immediate operation done by Professor Cameron, with a satisfactory result.

### **Weekly Clinics at the Toronto General Hospital**

Weekly clinics to the profession are given in the Medical Theatre, of the Toronto General Hospital, on Wednesday, of each week at 4 p.m., medical cases being presented at one clinic and surgical cases at the succeeding one. The city physicians are showing some interest in this new departure, the attendance at the last two clinics being fairly good. The Medical Theatre, which may be reached by passing through Ward 2, is well suited for clinics, being removed from street noises; it is also well lighted and comfortably seated.

At the clinic, after a case has been presented and the history read, the clinician dilates more or less on the salient points of its etiology, pathology, diagnosis or treatment. The clinic to the profession is an excellent method of conveying instructions to practitioners, removing their doubts and aiding them in getting a more exact and practical knowledge of the medicine and surgery of to-day. The finished outcome of the labors of physiologists, pathologists, therapists, may be expressed in a few sentences. It goes without saying, however, that the listener must aim to so equip himself with knowledge of the subject discussed that the gift of the clinician may not be in vain.

J. J. C.

### **Medical Inspection of Public Schools**

We understand that there are some important changes on the tapis in connection with the Toronto system of medical inspection in the schools. It has been proposed that a medical head be chosen for the department, to have authority over the medical inspectors now in office. This seems to be advisable, and is a

move in the right direction. There is also a probability that the department will be, as it should, completely severed from all connection with the Public School Inspectors. This is certainly calculated to get matters working much more smoothly and remove the possibility of further friction. We claim that the stand taken by Dr. Helen MacMurchy regarding the School Inspectors having authority over the Medical Inspectors, is right. The Medical Inspectors should be entirely independent of the Public School Inspectors, and should be placed under either a medical head, or, as we urged in last month's issue, under the Medical Health Department.

We trust that immediately after the elections, a month hence, this matter will be settled, as there is undoubtedly a very bright future in Toronto for Medical School Inspection if operated as it should be.

Dr. Helen MacMurchy was recently appointed by the Ontario Government to represent Ontario at the first annual meeting for the Study and Prevention of Infant Mortality of the American Association, which took place at Johns Hopkins University on the 9th ult. We understand that the Ontario Government has under consideration important legislations dealing with the problem of weak-minded women and infant mortality. Dr. MacMurchy, at the instance of the Government, prepared an extensive report on the latter subject, which, it is understood, may be the basis for legislation.

W. A. Y.

### **The Toronto General Hospital Weekly Clinics**

The Board of Trustees of the Toronto General Hospital have decided to conduct a series of Wednesday Clinics during the current winter. The medical profession are cordially invited to attend them in the Medical Theatre every Wednesday afternoon at 3.30. The Clinics are conducted each week by a member of the medical or surgical staff. Interesting and rare cases are exhibited and commented on. On Wednesday, October 26th, the

Clinic was conducted by Dr. Alex. McPhedran. The following cases were presented: Herpes Zoster (two cases), Typhoid Fever with Perforation (operation and recovery), Gastric Ulcer with Secondary Anemia, Addison's Disease, Congenital Heart Disease, and Typhoid Fever with Meningismus.

The first of the November Clinics held during last month was conducted by Dr. Alex. Primrose on the afternoon of November 2nd. There were some remarkably interesting cases presented, including the following: Result of direct transfusion, with case and method of operation, tubercular epididymitis, syphilitic sarcocele, plating of fracture (two cases) with skiagraphs, cleft palate, with method and result of operation. Perhaps the most interesting one was the case of a young man, aged twenty years, who entered the hospital about two weeks previous. It was found that he had sustained ten days before a severe cut in the back of the left calf, about four inches above the ankle, and the posterior tibial nerve and artery had both been severed. The artery was ligated and the wound sewn up. When he entered the hospital there was very considerable oozing of blood from the wound, which had by that time become septic. A day or two later the patient had a severe hemorrhage, necessitating the use of the tourniquet. Later the posterior tibial artery was ligated above the middle of the calf and the cut ends of the posterior tibial nerve were sutured. Following this operation the wound discharged large quantities of pus daily. Six days later there was a small amount of bright red blood oozing from the wound, and the next night the patient had another severe hemorrhage, when it was found necessary to ligate the posterior tibial artery close to its origin from the popliteal. Following this the patient was in a bad state. The blood count showed white blood corpuscles 16,000; red blood corpuscles, 2,848,000; hemoglobin, 40%. Dr. Primrose and his consultants then decided to use direct transfusion. The donor of the blood was the patient's brother, the

blood being taken from the radial artery of the donor to the median cephalic vein of the patient. A 10% solution of cocaine was used as a local anesthetic. Transfusion was continued for fifteen minutes, when the donor felt a slight dizziness. There was during the transfusion no dilation of the right side of the patient's heart. Before transfusion the patient showed a blood count of red blood corpuscles, 3,040,000; hemoglobin, 38%; with a blood pressure of 118. Thirty minutes after transfusion the red blood corpuscles were the same as before transfusion; hemoglobin, 51%; blood pressure, 138. Subsequent to the operation the patient greatly improved. Three days subsequent to the operation the red blood corpuscles were 3,072,000 and hemoglobin 50%.

Another case exhibited was that of a man aged thirty years. The case was one of tubercular epididymitis. He had no history of syphilis and the patient had always been healthy. Two months ago he felt shooting pains in the left groin. The swelling commenced with considerable pain. The swelling and pain a little later on abated slightly. Examination showed the epididymis enlarged and hard, with an area of softening in its lower half. The epididymis was not tender, and the testis proper felt normal. On October 10th the left testis was removed. There was a considerable quantity of pus found in the epididymis, containing a large number of tubercle bacilli, the epididymis itself a section showing tubercular necrosis. Two weeks after the operation the lower end of the incision showed a slight discharge, though the general condition otherwise was quite satisfactory.

Dr. F. N. G. Starr exhibited some splendid X-ray plates of fracture plating. The plates were taken from a man of twenty-seven years, on whose leg on October 8th last a large packing case fell, breaking both tibia and fibula. Both bones were broken at the same level, with displacement of the upper fragments inward. On October 17th Dr. Starr cut down on the fracture and



the ends of the tibia were approximated and plated. After this was done an X-ray plate showed the broken ends of both tibia and fibula in splendid apposition. The plates used are small pieces of thin steel, containing from three to six eyes for the admission of small screw nails. The plate is applied to the surface of the bone and screwed into the upper and lower fragments, with a result that there is almost perfect apposition. Dr. Starr said that he would go so far as to say that he considered it almost criminal not to treat all cases of fracture, whether simple or compound, by plating. The results are better, and the patient is up and around at a considerably earlier date than if he were treated by the ordinary method.

The weekly clinic of November 9th was conducted by Drs. G. A. Bingham and Graham Chambers, when the following interesting cases were presented: Brain tumor, paraplegia, charcot joint, cases of headache from various causes with treatment, fracture pelvis, scleroderma, tuberculous shoulder, acromegalia, cellulitis of scalp, exophthalmic goitre, ventral hernia following parturition, epileptiform seizures of obscure origin, laceration thigh, fracture of clavicle, arthritis, syphilitic ulcers.

The Hospital authorities announce that there will be a Clinical Pathological Conference, conducted by Dr. O. R. Mabee, every Friday afternoon at 4.15 in the Pathological Theatre.

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### PERSONALS

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We take pleasure in extending congratulations to Dr. Oswald Dinnick, now in London, on having successfully passed the primary examination for the Degree of Fellowship of the Royal College of Surgeons.

Dr. A. A. MacDonald entertained at dinner a number of the members of the Council of the Academy of Medicine on the evening of November 1st, Dr. Alfred Stengel being the guest of honor.



## ONTARIO MEDICAL COUNCIL

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THE following have been elected as territorial members of the Medical Council by acclamation. Those marked with a star were members of the last Council: Dr. G. R. Cruickshanks, Windsor, Division No. 1; Dr. A. B. Welford, Woodstock, Division No. 2; \*Dr. J. McArthur, London, Division No. 3; \*Dr. T. W. Vardon, Galt, Division No. 5; \*Dr. H. S. Griffin, Hamilton, Division No. 7; \*Dr. W. H. Merritt, St. Catharines, Division No. 8; \*Dr. R. J. Gibson, Sault Ste. Marie, Division No. 9; Dr. Alex. D. Stewart, Fort William, Division No. 10; \*Dr. J. S. Hart, Toronto, Division No. 12; \*Dr. H. Bascom, Uxbridge, Division No. 13; Dr. T. W. G. Young, Peterborough, Division No. 14; \*Dr. W. Spankie, Wolfe Island, Division No. 16; \*Dr. J. Lane, Mallorytown, Division No. 17; \*Dr. M. O. Klotz, Ottawa, Division No. 18.

Dr. C. W. Hoare, Walkerville, has been succeeded by Dr. G. R. Cruickshanks, Windsor, in No. 1 Division. Dr. J. H. Cormack, St. Thomas, has been succeeded by Dr. A. B. Welford, Woodstock, in No. 2 Division. Dr. Alex. D. Stewart is returned as the first representative of a new constituency, Division No. 10. Dr. S. C. Hillier, Bowmanville, has been succeeded by Dr. T. W. G. Young, Peterborough, in what is now known as Division No. 4.

4. On December 5th, 1910, contests will take place in Divisions Nos. 4, 6, 11 and 15. In Division No. 4, the candidates are: Dr. J. A. Robertson, Stratford, the former member, and Dr. A. T. Emmerson, Goderich. In Division No. 6, the candidates are: Dr. J. Henry, Orangeville, the former member; Dr. Taylor, Waubauskene, and Dr. McCollum, Thornbury. In Division No. 11, the candidates are: Dr. E. E. King, Toronto, the former member, and Dr. J. J. Cassidy, Toronto. In Division No. 15, the candidates are: Dr. A. E. MacColl, Belleville, the former member, and Dr. T. S. Tarncomb, Trenton. J. J. C.

### JOHN D. ROCKEFELLER'S LATEST GIFT OF NEARLY FOUR MILLIONS TO MEDICAL RESEARCH

JOHN D. ROCKEFELLER on October 17th celebrated the opening of the new hospital attached to the Rockefeller Institute for Medical Research in New York with an additional gift of \$3,820,000. This benefaction increases the income-bearing endowment of the institution to \$8,240,000. The occasion was further signalized by placing the institution's property absolutely in the hands of the trustees, establishing it in the future as an independent foundation. Its initial Board of Trustees comprise John D. Rockefeller, jr., Frederick T. Gates, William H. Welsh, Starr J. Murphy and Dr. Simon Flexner.

Mr. Rockefeller's first gift to the institution was made in 1901, when \$200,000 was donated. The year following he gave \$1,000,000 for the erection of a laboratory building, and later added \$620,000 for its completion. Before the laboratory was finished Mr. Rockefeller gave it its first endowment of \$2,600,000.

It is expected by the board that the work of scientific laboratory research, which, with even a generous endowment, has been necessarily more or less circumscribed, will now be extended to cover the entire medical field.

### ACCIDENT TO AN ORILLIA PHYSICIAN

DR. A. R. HARVIE, of Orillia, Chief of the Red Tan Hunt Club, was mistaken for a deer by a guide, and shot through the left arm and forearm on Saturday, November 5th, in Longford Township, about forty miles from Orillia. The wounds, being made by a high-power rifle with an expanding bullet, are most serious. One of the bones of the forearm and the ulna artery were shot through. A Toronto surgeon, who is a member of the club, was at hand, and gave the needed assistance, afterwards placing the injured physician in a canoe and paddling him twelve miles through a chain of lakes to meet autos, sent out by Mr. J. B. Tudhope, M.P.P. Other members of the club cleared the trails and carried the canoe over the portages in the gentlest manner possible. An air bed and air pillow were placed in the canoe, and, owing in great part to the care taken, it is hoped by

those in attendance that the arm and the usefulness of the hand may be saved. He was brought to his home in Orillia. Dr. Arthur Ardagh walked fourteen miles by night through the bush to the nearest settler's, and then drove seventeen miles to Washago to reach a telephone, and Dr. W. C. Gilchrist, coming from an adjoining camp, gave valued help on the forty-seven mile trip out. Dr. Harvie's condition to-day is satisfactory. He showed splendid fortitude, having bound up his own arm when he was shot.—*The Globe*.

From Dr. N. A. Powell, who gave to a reporter the above item, we learn that good progress toward recovery is being made. There has been no constitutional disturbance or wound complication. The prospects now are that the usefulness of the hand will be but little impaired.

### THE JACKSON HEALTH RESORT

We take pleasure in calling the attention of the readers of this journal to the Health Institution at Dansville, N.Y.—the Jackson Health Resort, as it is popularly known—established for fifty years. The improvements and enlargements from time to time have given it a position in the public mind, and a reputation second to none, for the good work it does for those who need thorough and judicious treatment for the cure of chronic ailments, but also in its position with reference to preventative hygiene. It takes particular pains to instruct and culture its clientele how not to be sick: so that its guests really get something permanent in the way of responsible consciousness, which helps them ever after in the way of life. We are glad to notice that recent additions to their equipment embrace the very best appliances for the administration of high frequency currents of electricity. The experience within the last year with reference to the value of this form of administering electricity has impelled them to enlarge their capacity for treatment, especially of arterio-sclerosis, for which they find this modality one of great value.

This has been a very popular season with the Resort, which has been crowded with guests taking treatment and resting. The climate and internal environment in which the institution is

situated, and with which it surrounds its guests, makes it a most desirable place for fall and winter treatment.

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**The Academy of Medicine.**—The second stated meeting of the Academy of Medicine for the current winter was held in the Biological Building on Tuesday, November first. The President, Dr. A. A. MacDonald occupied the chair, and the meeting was well attended. The guest of the evening was Dr. Alfred Stengel, who is Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia. Dr. Stengel delivered a splendid address entitled "Cardiac Insufficiency: Factors in its Development, Prophylaxis and Management."

**A Desirable Suite of Apartments.**—We beg to call the attention of our readers to an advertisement, appearing on page xxvii of this issue, of an exceedingly desirable suite of apartments, particularly suitable for a medical man, and now for rent, at 64 Bloor Street West, Toronto. The suite, as it will be noticed from the advertisement, is on the ground floor and consists of a consulting room, combination bedroom and sitting room and private bathroom. The location is an ideal one, and the suite should be promptly rented by any young physician looking for suitable accommodation.

**The Toronto Hospital for Incurables.**—An important milestone in the history of the Toronto Hospital for Incurables was passed at its annual meeting on Wednesday, October 26th. It was the opening of the new wing, named after the President of the Board, Mr. Ambrose Kent, to whose personal efforts, to a very large extent, is due the success of the forward movement which culminated in this addition to the accommodation of the hospital. The ceremony was a very simple one. After the close of the annual meeting, Mrs. Kent, with Sir Mortimer Clark, led those present to the door of the new wing, and opening the door, declared it open. The building, which fronts on Dunn Avenue, is a handsome and spacious fire-proof structure, providing room for one hundred and eight beds, thereby almost doubling the capacity of the hospital. The occasion was also marked by the presentation of a beautifully illuminated address to Mr. Kent, who has for many years given so generously of his time, his ability and his means to the work of the institution.



## THE USES OF PERHYDROL

BY STAFF-SURGEON MAJOR SEITZ, M.D., PH.D., MUNICH.

Hydrogen peroxide ( $H_2O_2$ ) was employed in surgery before the days of antiseptics. It fell into disuse because of its unreliability, its instability, and its acid impurities, which caused irritative action. Of late years, however, a perfectly pure form of  $H_2O_2$  has been prepared, and this has received the commercial name of Perhydrol. It is a clear, transparent liquid, containing 30 per cent. by weight ( $\approx$  100 per cent. by volume) of  $H_2O_2$  in aqueous solution.

The therapeutic actions of  $H_2O_2$  consist of disinfection, hemostasis and deodorization.

To begin with general surgery. It may be used for irrigating, for moist bandages, compresses and topical applications, for gangrenous or ulcerative states of the skin, etc. A gangrenous area should be irrigated with a 3 per cent. solution, bandaged with a moist dressing of Perhydrol of the same strength. The bandage should be removed two or three times daily owing to the loss of oxygen. Ulcers may be treated with compresses soaked in a 3 per cent. solution of Perhydrol. They should be kept on for a quarter of an hour, twice daily, and then dressed with boric solution. This treatment cleanses the diseased surface very rapidly and healthy granulations spring up.

The deodorizing action of this substance is best recognized by using it in 3 per cent. solution in cases of advanced cancer, empyemata, gangrenous and foul ulcers. To hasten the separation of sloughs or the core of an abscess wet compresses of a 1 per cent. solution are useful.

Perhydrol also possesses its applications to special branches of surgery, as the following details will indicate: In rhinology, the syringing of the nares with a 3 to 5 per cent. solution is an effective means of loosening crusts and removing mucus.

The hemostatic action of Perhydrol is extremely useful in nasal operations such as the removal of polypi. The tampons

which are employed in the after-treatment to prevent the formation of adhesions should be soaked in Perhydrol for its antiseptic virtues.

Morbid conditions of the mouth are benefited by Perhydrol. These conditions include oral fetor, mercurial stomatitis, syphilitic ulceration, obstinate gummatous swellings, leucoplakia.

In otological work, one may begin by instillations of 1 per cent. solution, gradually increasing to 10 or 15 per cent. as tolerance is established, in the after treatment of chronic otitis. A 3 per cent. solution is an excellent means of softening hard plugs of wax.

In diseases of the eye, a 3 per cent. solution may be used as a lotion. The development of oxygen effects a cleansing action, which is not equalled by any other method. This applies equally to cases of traumatic keratitis, and serpiginous ulceration, and to a less extent to tubercular ulceration.

In regard to diseases of the genitals, soft chancres, even when gangrenous, may be touched two or three times daily with a 30 per cent. solution of Perhydrol, in the same way as carbolic acid is employed. They should then be dusted over with Dermatol. In three days healthy red granulations appear. Indolent suppurating buboes should be treated in the same manner as ulcers, to which reference has already been made. Another excellent method of dealing with soft chancres is to cleanse them with 3 per cent. boric solution, then cauterize them with sulphate of copper and apply three times daily a 3 per cent. solution of Perhydrol in glycerine. Later on it is sufficient to wash the sore with 1 in 100 to 1 in 300 Perhydrol solution to which some nitrate of silver is added.

In the practice of gynecology it will be found that a 3 per cent. solution injected with a Braun's syringe or applied on pledgets of cotton wool, controls uterine hemorrhage. In membranous endometritis the uterus should first be wiped over with a 3 per cent. solution, and then a tampon containing a 2 per cent. solution be inserted.

Perhydrol may be used in follicular tonsillitis or diphtheria. It may be applied pure, or sprayed on in solutions of  $1\frac{1}{2}$  to 3 per cent., to assist the disappearance of the exudation.—*Abstract from "Folia Therapeutica,"* October, 1907.

## PLATES AND FILTERS FOR WORKERS IN SCIENTIFIC PHOTOGRAPHY

THE difficulty in the reproduction of color differentiation has been from time to time made the subject of sundry papers by different authors, notably by Hubbard (*Jour. Bost. Soc. Med. Sci.*, Vol. III. 2), and later by Richardson, Mees and other photographic workers.

In Hubbard's paper he definitely states the laws underlying the correct practice for the obtention of increased photographic color contrasts—laws which are well known to all students of color, viz.:

“1. To increase the photographic intensity of a color, a screen of complementary color should be used.

2. To decrease the photographic intensity of a color a screen of the same color should be used.”

The production of color screens of complementary color to the stains in ordinary use by histologists and bacteriologists is essentially a matter spectroscopic, and concerns the physicist. Their use, however, covers the entire photographic field.

So far as the subject concerns pathological science there is no need to expatiate upon the difficulty experienced in the production of either micrographic or macrographic negatives which will render positive prints true to the object photographed. Such examples as combined stains of, say, eosin and methylene blue, haematoxylin and safranin, etc., ordinarily give results in which only one stain is recorded at the expense of the other.

Color filters for either accentuation or decrease of contrast are, however, now obtainable from the G. Cramer Dry Plate Company, who will furnish all necessary particulars upon request. The possession of a thoroughly equipped chemico-physical laboratory furnished with apparatus of extreme delicacy, allows of authoritative results.

In conjunction with these color-filters the production of a new dry plate whose sensitiveness extends to 7000 in the extreme red is an invaluable aid to the scientific worker. This plate (termed the “Spectrum”) is the only plate manufactured either in the United States or Europe whose extreme red sensitiveness is ob-



tained in the course of manufacture, and not by subsequent bathing methods.

The Cramer X-ray plate needs no particular mention, as it is already too well and favorably known, and while we feel that it has reached a point where further improvement would only be evidenced by advances of small interval, yet special investigation results in the production of a developer formula particularly suited for this class of work, as follows:

A—Water .....	32 ounces
Hydrochinon .....	1½ ounces
Sodium sulphite (Cramer's dry).....	1 ounce
Sulphuric acid .....	60 minims
B—Water .....	32 ounces
Sodium carbonate (Cramer's dry).....	1 ounce
Potass. carb. (Cramer's dry).....	3 ounces
Potass, bromide .....	120 grains
Sodium sulphite (Cramer's dry).....	3 ounces

To develop take equal parts A and B.

Development time 8 to 10 minutes at a temperature of 70° Fahrenheit.

This formula has given unqualified satisfaction to authoritative workers in Roentgenology, its function being the differentiation of the softer tissue planes.

R. JAMES WALLACE,  
Director Research Laboratory G. Cramer Dry Plate Co.



## DEATH OF DR. LUTON, ST. THOMAS

Dr. Leonard Luton, one of the most familiar figures among St. Thomas citizens, and for forty-two years one of its leading medical men, passed quietly away on Nov. 2nd, at the family residence, after a brief illness from gastritis.

In his death a most active and useful life was closed. Born in Yarmouth, February 5, 1835, he taught school in the township at the early age of fifteen, and almost constantly since has been closely identified with the public life of the county and city, in addition to attending to a large medical practice.

After teaching district school for six years he attended the New York Conference Seminary, at Charlotteville, N.Y., and in 1858 entered the provincial normal school at Toronto. Returning to the ranks of the teaching profession, he was appointed superintendent of schools for East Elgin.

He graduated in medicine from Hahnemann Medical College in 1867 and the following year began his practice in St. Thomas, which he continued up to the time of his illness and death. He attained a high reputation among the medical fraternity, and was honored by them on several occasions by elevation to office in the Ontario Medical Council. He was a member of the Board of Examiners for the Ontario College of Physicians and Surgeons for the years 1885-6-7, and a member of the council itself since 1890, and president of the council in 1898.

In 1875 he was appointed physician and surgeon of the Elgin House of Industry, which position he held continuously to the time of his death. He was appointed a coroner of the county in 1895. He was also a member of the medical staff of the Amasa Wood Hospital and served several terms on the board of governors.

Besides his active services in the medical profession he took a keen interest in civic politics and was an Alderman for the years 1903-4-5. In 1896 he contested the Mayoralty, but a three-cornered fight resulted in defeat.

He was an active member of the Disciples Church on Railway Street, and took an active part in the various activities of that denomination throughout the province. He was a member of the Board of Directors of the College of the Disciples, as well as a member of the faculty of that institution.

In politics Dr. Luton was a staunch Reformer. He was also identified with fraternal societies of the city, being a member of the A.O.U.W. and I.O.O.F.

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**WM. CANNIFF, M.D., M.R.C.S., ENG. 1830-1910**

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Dr. Canniff was born in Thurlow, Hastings, Ont., in 1830. He received his medical education at the Toronto School of Medicine and the University of New York (M.D. 1854). He was admitted a member of the Royal College of Surgeons, Eng., in 1855, and, subsequently, served in the British Army Medical Department towards the close of the Crimean War.

Returning to Canada he practised his profession at Belleville, Ont. Subsequently he succeeded Dr. Rolph as Dean of the Medical Faculty of Victoria University, and took up his residence at Toronto. He was appointed on the Staff of Toronto General Hospital in 1869. He was also Medical Health Officer of Toronto for several years. Dr. Canniff's literary work is conspicuous and well known. Besides important contributions to the lay and medical press, the separate works from his pen are: "A Manual of the Principles of Surgery, Based on Pathology, for Students (Philadelphia, 1866);" "A History of the Early Settlement of Upper Canada (Toronto, 1869);" "Canadian Nationality: Its Growth and Development (Toronto, 1875);" and "The Medical Profession in Upper Canada: An Historical Narrative, Including Some Brief Biographies (Toronto, 1894)."

In professional life Dr. Canniff made an excellent impression on his confreres, as he united sound judgment to considerable operative skill. Among his literary works, "A History of the Settlement of Upper Canada," is considered to be of great interest and value at the present time.

J. J. C.

## DOCTOR "BOBBY'S" DILEMMA\*

BY GORDON MUIR.

A STORY OF PERPLEXITY, INVESTIGATION AND REALIZATION.

Bobby Patterson—pardon, Robert Patterson, M.D., now—called on me in great perplexity. Bobby has always consulted me when in trouble, ever since he and I fought it out on the campus in the dear old days, when I went down to ignominious defeat. Bobby was shortly getting married, and a suitable bridal present was the perplexity. "How would a nice, pretty flying-machine do?" I queried, brightly. "You could try it out first, you know—and your fiancée looks well in black," I added, absent-mindedly. Bobby flicked his cigar impatiently. "Well, then, give her a nice ring, a brooch, a bracelet, anything of that sort," I opined, hopefully. "She could stock a small jewellery store to-morrow," snorted my M. D. "Why not give her a Player-piano?" I suggested. "Thought of that," quoth Bobby, gloomily. "I have tried several, and whereas they certainly give results—they don't give results that please me. Seems to me that one has got to be an expert to get human, instead of merely mechanical, effects. I have heard there was a perfect, sensitive, human-like Player, but it must be that they have to be brought from Europe, or some foreign country." Bobby, it might be remarked, was of musical temperament, but his music finished there; he could not play a note. "Bobby, Bobby," I groaned, "here are you, a leading Toronto physician, born in Muddy York, and yet you know not that the pioneers of self-playing instruments are even now under your optic. Know ye not, my unsophisticated youth, that right here in Toronto you will find the panacea for your ills? Why, Bobby," I continued, warming to the subject, "accompany me now down town, and visit an old haunt of mine, where we will witness all the transitional stages from the self-playing organ of fifteen years ago, to the perfect Player-piano of to-day."

We went, and there, surrounded by a delightfully musical atmosphere, I modestly expatiated, whilst Bobby imbibed wisdom. First of all our interest was directed to the "Bellolian," or self-playing organ of fifteen years ago, operated with music-rolls exactly as is the Player-piano of to-day. It was striking from the fact that the principles followed in the Player-pianos of to-day were fully anticipated in its construction. Here were the rows of little pneumatics and tier after tier of valves and air ducts, just as you see them in the modern

\* Publisher's Department.

instrument. Then the Cabinet Piano-player took our eye, and marked a further stage in the evolution. Now relegated to the antique, it bore mute testimony to the genius which inspired its builders to struggle still onward towards perfection. And then we looked at perfection itself—in all the glory of its artistic lines and graceful appearance, reflecting the electric lights from its magnificent mahogany casement. Bobby forgot all about me, and hastily scanned the rack of music-rolls, finally selecting the Overture to the opera "Tannhauser," which, had the composer written nothing else, would have alone immortalized him. He adjusted it to the music spool-box, took the sensitive tempo lever between index and second fingers of his right hand, and commenced to pedal gently.

Then Bobby became as one inspired.

As the stately strains of that song of patience and hope—the Pilgrims' Chorus—gradually died away, they gave place to wild, dishevelled music, depicting the revels in the home of Venus. Then came Tannhauser's bold song in praise of the Goddess of Love, her fascinating song to the Knight, and then a return to revelry still wilder than before. As this subsided the Pilgrims' Song returned, and, growing ever and ever more powerful and triumphant, finally proclaimed the heavenly message of deliverance in majestic climax. The noble theme, thundered out by the bass with the emphasis of a Divine Command, the feverish, passionate insistence and ever-growing excitement of the treble, combined to produce an effect of such sustained grandeur, that it seemed almost impossible that human ingenuity could have conceived an instrument capable of such interpretation of the mighty masterpiece, in the hands of one whose sole musical ability was a natural love of music.

When the last triumphant chords had ceased, neither of us spoke. We felt the awe of the dead composer upon us.

And then I said, "Well, my friend, did I tell you truly? Have you at last found a perfect and human Player-piano or is the Bell-Autonola another disappointment?"

Bobby has temperament—I said so. He also possesses enthusiasm and a reputation for veracity. He pumped my arm vigorously, and finally ceased his word-picture of worship at the Autonola shrine, through lack of further superlatives.

We spent further considerable time whilst Bobby, the Novice, proved by his numerous selections from grave to gay, from ragtime to grand opera, that he had nothing to learn from Paderewski.

A Coroner's inquest was delayed for nearly an hour whilst Bobby was giving entirely unnecessary instructions regarding

immediate delivery of the instrument to the new home, and by a laudable effort to deplete the rack of most of its choicest music-rolls. "And remember," said Bobby to me at parting, "remember that it is the wonderful simplicity and ease in operation that make it so perfect. Why, old friend, it seemed to be a part of my very soul—it responded to my unuttered thoughts."

"True," I replied, "true, and don't you see the reason, Bobby? The people who make it have been studying and manufacturing pneumatics for nearly fifty years, and naturally have experience to guide them. No other maker has this, and it is experience that counts, Bobby, and the makers of the Autonola reached the stage years ago at which other makers are only arriving now. Good-bye." It would be a revelation to drop in at Bobby's new home now, when he is having what he calls "one of his musical evenings"—only two people are there—first, one would be the musician and the other the audience—then they would change places and Bobby would be the audience.

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#### THE GRAPE AS A FOOD\*

It has been established many years ago that the grape has certain food value, a food value considerably greater than that of any other fruit. There have been a number of tabulations showing the percentage of nutrition in food substances, and it has been shown that the grape stands fourteenth on a list of thirty or more. The nutrient qualities of the grape are due to the large amount of sugar, gluten, mineral salts and fruit acids contained therein. Of course the most nutritious constituent of the grape is grape sugar, an ingredient that is very easily appropriated by the human system. Grape sugar requires a smaller amount of oxygen, produces less heat in the body and makes less demand upon the stomach than do most foods, the energy which sugar in general furnishes being more readily established by grape than by other sugars.

The attention of the medical profession is called to the grape juice as prepared by E. D. Smith of Winona, Ontario. Mr. Smith guarantees the profession that his grapes are the finest that can be grown and that in the preparation of his Grape Juice every possible precaution is taken regarding not only cleanliness, but that the Juice is not in any way fortified and thus rendered unfit for human consumption. Mr. Smith will appreciate it if medical practitioners, in ordering grape juice for their patients, will specify his particular brand.

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\* Publisher's Department.