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Original Communications.

SOME POINTS ON TUBERCULOSIS.*

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MR. PRESIDENT AND GENTLEMEN,—When Mr. Bradshaw did me the honor of asking me to present a paper to your learned body, I began casting about in my mind for a suitable subject. The selection seemed difficult. If you were all physicians, or if I were an actuary, the matter would have been comparatively easy. One likes to have something new to present, especially when speaking before a strange society. But when I had thought over the matter a few days I concluded that wisdom would counsel utility rather than novelty in the choice of a subject, hence the title you see on the agenda paper before you.

For, if there be any subject upon which, as actuaries and physicians, we can take counsel with a fair understanding of each other, and sympathy with each other, the subject of tuberculosis is surely that one. Many other questions pertaining to the longevity of applicants for life insurance are of paramount importance, but none of them is so well understood by the laity—I speak from a medical standpoint—as to tuberculosis, with, perhaps, the possible exception of alcoholism.

Apoplexy, capillary fibrosis, paralysis, chronic interstitial nephritis, cyclic albuminuria, alienation, degeneration, neuroses, *et al*, present equally interesting and important phenomena to the trained medical mind. From their nature, however, they are not so well understood by the actuarial world as is the subject under consideration to-night.

As to the importance of the disease we are all agreed. When I remind you that one person in seven dies from the White Plague of the North—that is, 14 per cent. of all mortality, at all ages, and in all social conditions of life, comes from the

* Read before the Insurance Institute of Toronto, March 10, 1904.

ravages of a microscopic bacillus, the existence of which was not known thirty years ago—there will be born upon you the great importance of as wide a knowledge of the question as may be possible, not only among the medical profession, but among the community at large. No one should be ignorant of a few of the important points in the life history of the germ which is causative of consumption, not even the rag picker in the street, nor the Chinaman who looks after your linen, nor the colored man who waits upon you in your hotel. For these people, and others like them, can do much to prevent the spread of the disease once they are fully seized of the idea that it is infectious. Dirt and unhygienic surroundings are detestable, but no amount of dirt, no environment, no amount of exposure, intemperance, want or vice, will *per se* produce tuberculosis. *Omne vivum ex ovo*—all life from pre-existing life—is the text of modern pathology. The tubercle bacillus is a living entity. The question, whence it comes, takes us back to that old abyss, the dawn of life, a question forever as unanswerable to the mind of science as to the eye of faith.

The germ, as I have said, is a living entity, with certain characteristics in which it differs from other germs, just as rye differs from wheat, the orange from the lemon, the oak from the ash. It must be present before anyone—no matter what his heredity, his physical condition, reduced it may be by alcohol, starvation, excesses, vice or other disease—can have tuberculosis. This germ, I say, must get into our system from without before we can contract tuberculosis. Now, two points upon which I wish to lay stress, are :

(a) An individual is more liable to contract the disease who lives in squalor, with unhygienic surroundings, whose system is reduced by vice, intemperance, other diseases, want, cold, dampness or overwork, mental or physical.

When we get down to the ultimate, the battle between the invading germ and the system it has invaded, is a battle between the tubercle bacillus and the white blood corpuscle, or, as it is called, the "leucocyte." Now, these terms, "white blood corpuscle" or "leucocyte," may not convey much idea to some of the purely actuarial part of my audience. Suffice it to say, that it is a small, microscopically small, portion of protoplasm, a substance something like the white of an egg; vitalized, generally globe-shaped, but capable of changing its form and position, capable of feeding itself, and of excreting what is not needed for its own growth and sustenance. The white blood corpuscle exists in countless myriads in the blood, muscle, bone, nerve tissues, and indeed, in all the tissues of the body.

When the germ, say a tubercle bacillus, finds entrance into an animal body, at once these white blood corpuscles—

phagocytes they are also called—rush to the breach to repel the invader. It reminds one of the lines in Milton's "Paradise Lost"—

"Thenceforth on all sides to his aid was run
By angels many and strong."

So the phagocytes rush to save the system from being overcome by the marauder, the tubercle bacillus, which once safely lodged and entrenched, will ultimately capture the whole body. The phagocytes make a strong fight, and endeavor to oust the invader, not by throwing him from the battlements, but by quietly surrounding him, enfolding him, eating him. Now, it all depends upon the relative strength of the phagocytes and tubercle bacillus as to which shall gain victory. If the phagocytes be weakened by disease, vice, intemperance, want, or *heredity* in the person of the man, woman or child in which they exist, then they may either decline the conflict, or risking the battle, be overcome by the stronger adversary, the tubercle bacillus. Then the citadel is won, and the tubercle bacillus, having gained an entrance and lodgement, begins at once to reproduce himself, to make his way to other spots where new foci are established, and worse than that, begins to manufacture an insidious poison, a toxin which circulates in every part of the body of the individual infected, producing weakness, lassitude, fever, want of appetite, bloodlessness, pains, headache, diarrhea, loss of flesh, night sweats, and other dread symptoms of the horrible scourge which we call tuberculosis. The point I wish to emphasize is this, if we wish to avoid disease we must keep our white blood corpuscle—which for our present purpose, is equivalent to saying our systems—in the strongest possible condition, so that they may be efficient to do battle, not only with the tubercle bacillus, but with many other kinds of germs, such as pneumococcus, which produces pneumonia, the Klebs-Loeffler bacillus, which produces diphtheria, and hosts of others which are constantly threatening the integrity of our health. I said just now that the tubercle bacillus gets to the system from without. The number of cases recorded in which it has been found in the new born at birth is so few that, considering the total number of cases of tuberculosis, they may be put down as zero in the mathematical sense of the term, or as an infinitely small number, and so disregarded. Thus we see that the disease is always contracted.

This brings me to my second point:

(b) What is the influence of heredity in this disease? We can most of us remember the time when consumption was regarded by both laity and the profession as entirely hereditary. The great Koch had not yet discovered the tubercle bacillus. The bacteria were practically unknown. Their life processes and their causative influence in various processes, such as fer-

mentation and putrefaction, were as yet not discovered. Then all the laity and the majority of medical men considered that an individual was born with the seeds (used in a very indefinite and unscientific sense) in him, that only needed time to develop. Why some children of tuberculous parents, and not all of them succumbed to the disease, was a question never answered. I say the majority of medical men believed so, but others in my recollection, before the tubercle bacillus had ever been heard of, believed that one person "caught" the disease from another. To this belief they came from long observation and clinical experience. They knew not in what the infection consisted, but neither did they in measles, or scarlet fever, or any other of the infectious or contagious diseases. If then it is clear that the disease is always from without, what is the point in heredity? In my opinion, this question is a very, very serious one for life companies.

Doctors claim that medicine is a science. It is, and yet it is not. Certainly it is not an exact science, and speaking to men who are in the habit of dealing with mathematical truths, we must admit much looseness of reasoning, many fashions and fads in medicine. There can be no fashion or no fad about, say, the law of similar triangles—that is a truth forever fixed. Indeed, there can be no fashion or fad about pure mathematics. I will not say so much about statistics. You have probably all heard the definition of statistics, given by one who is supposed to know of what he spoke. He said, "There are three kinds of lies—first lies; second, d—d lies; and third, statistics." Joking apart, statistics are, I believe, notoriously misleading. I said just now that there are fashions and fads in medicine and surgery. There always have been, and I expect always will be. Only a few years ago a woman who had, say, an ingrowing toe-nail was in danger of losing one or both ovaries for the correction of that ingrowing toe-nail. Young men, anxious to be in the front rank, were ready to open abdomens and remove ovaries on the shortest notice. The fad ran its course. Common sense and experience stepped in, and now the number of ovaries that find their way to the waste basket, so to speak, are comparatively few, and I believe that nearly all that go there, go for good and sufficient reasons. Then another fad—the appendicitis fad, with which you are all more or less familiar, came to the front. Young and enterprising surgeons were alert for opportunities to show their skill in diagnosing disease of and in removing appendixes. Many were sacrificed to the new scientific fashion. Fortunately the appendix is only an appendix, and not necessary, so far as is known, to the preservation of the race, so it did not by its removal make so great a hiatus in the subject, so to speak, as did the removal of ovaries. I mention these two among many

others that might be recalled as fads in medicine, to show that with an inexact science the pendulum of fashion may swing too far out for either truth or safety. I believe there is a danger of the pendulum swinging too far out in the matter of contagion in tuberculosis, to the neglect of hereditary predisposition. In correspondence with medical examiners for our company, I catch traces of the thought that is in the air—that tuberculosis is not hereditary. The idea permeates the lay mind, and has taken a considerable hold upon a certain portion of the professional mind as well. The agent is always alive to press the new quasi-scientific fact upon the doctor who examines; and gentlemen, it is surprising the impression which a good, hard-eyed agent can make upon some doctors—examiners—by looking him square in the face and saying slowly, and as one who knows: "But doctor, consumption is not hereditary, you know that, being a doctor, and reading the latest advances in the science of bacteriology." I have, myself, experienced just such nerve from agents. Now, I wish to say advisedly that, Koch, the microscope, asepsis, and all the recent advances in medicine and surgery notwithstanding, we have not a monopoly of the wisdom of the ages in our present time. Men saw, and observed, and reasoned, and thought before the microscope revealed the tubercle bacillus, and they noted that tuberculosis was hereditary. We cannot afford to let go old landmarks, which are the crystallization of centuries of thought and observation by great minds, without taking chances of making great errors.

There is a law in nature, which seems to be universal, viz.: that in the evolution of the species—and by species we mean, for the purpose of this paper, man—the characteristics last to be acquired by the individual, race, or species, are those which are first to be lost in time of stress. This is very evident in nervous diseases. One of the latest acquirements of man, as a species, is higher mentality. This distinguishes him from the lower animals. So an individual whose full development is arrested, is very liable to show a greater or less degree of mental instability. Again, such an individual is liable to show a peculiar susceptibility to the infections which attack human beings. Time will not allow me to discuss this point from the strictly scientific side. The amount of thought which has been given to the question of heredity has been enormous. Some of the best minds that the world has produced have given their best efforts to the elucidation of the subject. In the middle ages, Von Helmont; later, Buffon, Herbert Spencer, Haeckel, Weismann, Nageli and Darwin—names surely to conjure with in science—each worked strenuously to arrive at definite conclusions. Pure mathematics have been invoked as an aid to systematize such conclusions, and I am tempted to give you a

few formulæ in order to please the purely actuarial part of my audience, but I am pretty sure that the medical portion would not understand them, and I am very sure I could not explain them.

Suffice it to say that the following represents the best and latest findings on the subject, so far as we are to-night concerned—"When through disease, immunity is not attained; but, on the contrary, the parental tissues, as in progressive tuberculosis, become progressively weakened and susceptible to the deleterious action of the toxin, the germinal idioplasm may also be weakened, and an offspring be developed more susceptible to the particular infection." The point here is, that tuberculosis in a human being does not produce immunity. May I explain that by this is meant that an individual recovered from tuberculosis is not only liable to take the disease again (I speak in lay language) but is more liable than even before the first attack. This you all know is not true of many of the infectious diseases—measles, scarlet fever, smallpox, etc., in which the disease does produce immunity.

"An offspring may be developed more susceptible to the particular infection." The infection of which we speak to-night is the one in which we, as insurance men, are more interested than in any other. So to have so clear and definite pronouncement by one of the first of living pathologists, Professor Adami, Montreal, must give us pause when we come to adjudicate individual cases in which contracts are entered into involving the money of policyholders and shareholders alike.

It may be thought that I have taken too much pains to demonstrate what has been universally conceded—that tuberculosis is hereditary—that "the mountain has been in labor and brought forth a mouse." But let me repeat, there is a heresy taking strong hold upon the public, and to a greater or less extent upon a large section of the medical profession, that the hereditary factor in tuberculosis is of very little importance, if it exists at all. It is this swing of the pendulum which I would contradict. This fashion in a medical subject, which from its nature may be appreciated and taken hold of by the public at large, will work incalculable harm as well in social and family relations as in business relations. I have been in the habit of saying to my students at the clinic that what we inherit from our parents is not the germ of the disease, but a peculiar quality of tissue which is a good soil for the growth of the germ. Very many of us—indeed, I believe most of us in this room—have been at one time or another, and some of us many times, infected with tuberculosis, but the soil was not good—in more scientific language, the phagocytes were too strong for the tubercle bacillus, and general disease and infection did not result. It is surprising the number of cases of old cured tuberculosis we find in the post mortem room, the subject

having died of some other disease, and never having suspected that he had suffered from tuberculosis. If you plant a pine tree in a black ash swamp, that pine tree will die. If you plant a black ash on a pine ridge, that tree will die.—Why?—The soil is not suitable for that kind of tree. If you plant a tubercle bacillus in a soil which is not suitable, it will die, and then the host will escape. If you plant it in favorable soil, inherited from ancestors, or made suitable by want, intemperance, vice, etc., it will live and general infection of the host will result with the development of consumption and the fatal ending.

You are probably all familiar with Maudsley's statement, which is worthy to be engraved in letters of brass—"There is a destiny made for a man by his ancestors, and no one can elude, were he able to attempt it the tyranny of his organization." This is gospel both as to our physical and psychical natures. We should then, both in season and out of season, try to check the growing tendency to belittle the effect of hereditary influence as regards consumption, remembering that the fashion nowadays is to cultivate germs and make them accountable for all the diseases to which flesh is heir.

Our Actuarial Department has recently taken the trouble to gather from three of the largest and most progressive Canadian life companies some information regarding claims on account of tuberculosis. It is extremely interesting and instructive, but as the period of investigation only covers five years, and the total number of deaths only 304, we cannot hope to make so accurate or useful a generalization as has been made by larger companies doing business over much longer periods of time. I have here the results of the investigation, which, while useful upon the printed page, are useless for me to read to you seriatim, so I may give you some conclusions which are based on the figures before me. Remember that the total number of cases of deaths from tuberculosis is 304.

(1) Regarding over-weight and under-weight—in 231 cases, or 76 per cent. of that total number, the weight was under the standard. In 71 cases, or 23 per cent. of that total, the weight was over standard. This is very instructive, and quite tallies with what we have read as to the findings of larger companies—namely, that the personal equation as to under-weight, is of the very highest importance. 76 per cent. of these dying of consumption are under-weight. What about the over-weights? 23 per cent. died of consumption. It shows that so far as consumption is concerned, over-weights are not nearly so dangerous as under-weights. Let us not forget, however, that they make up in many other ways for a high mortality; they depart from the normal, and are, therefore, prone to degeneration.

(2) Of these under-weights 28 cases, or 12 per cent., had a family taint of consumption, while of the over-weights six cases, or 8 per cent., had a family taint. This gives only 34 cases out of a total of 304 in which the record shows a family taint. Here is where statistics are apt to mislead. The time is only five years, and the results as to heredity are practically valueless. The results shown by companies over a long period of time should be, and are, serviceable.

Now, I wish to state that I firmly believe that all statistics of all companies are vitiated in regard to tuberculosis and some other diseases, especially such as are looked upon as a disgrace in the family, by incorrect data, by false premises. Two and two make four, but if it is found that, as a matter of fact, one of these twos is one and three-quarters, then those two twos do not make four. I believe that an enormous amount of misrepresentation goes on daily as to family history when it applies to life insurance. I am led to this belief, not only by the incredibly small number—34—of tainted cases—34—in our 304, but also by all literature of a statistical kind to which I have had access. It does not tally with the ordinary medical experience in either private or hospital practice. In hospital work and in private practice we medical men get truthful answers when we are expected to cure the patient. The suffering one is anxious to have the attending physician very accurately informed as to all points bearing upon the case. I am sure that all the medical men here and elsewhere will bear me out when I say that the rule is (obviously we have no figures) that when we investigate a case of tuberculosis in hospital or private practice, we get a history of a taint in the progenitors. What do our five years' figures show here? Astounding as it may seem, it shows that only one in every nine persons dying of consumption had any family taint at all. Leaving eight out of nine deaths from tuberculosis in persons with no hereditary taint. This is the result from three Canadian companies, making, I am certain, as careful a selection as is possible. This upsets all ideas, both practical and scientific, of heredity, and would thoroughly mislead one who was not forewarned. I quote the figures and make the remarks about our experience as Doctors in practice and our experience as Doctors examining for life insurance, to show that the mental attitude of the average human being changes according as he is a patient, or an applicant for life insurance. In the one case he tells all he knows; in the other his interest, his inclination and human instinct (that of self-preservation) makes him glose over causes of death or illness, and give anything but consumption as the cause of death. You may say that men are not sufficiently given over to the Father of Lies as to make so great a difference in results. Remember that the

aggregate is made up of units, and that each unit tells his own tale, deterred in some cases from drawing too long a bow, by the fear of his contract being voided, still going far enough to vitiate our premises for the truthful working out of statistics.

Please remember that I do not give the above figures as fairly representing the statistical showing as to taint or non-taint in tuberculosis; but to show how astounding a result is got as to heredity, by taking a comparatively small number of cases, and over a short period of time. For these figures would show that the company runs about eight times as much risk in accepting applicants with no family taint as they do in accepting those with a taint; which is evident foolishness, so that the Vandal who spoke of lies—d—d lies and statistics—was not so far wrong as to certain kinds of statistics. If there be so egregious an error in five years, there will be some error in fifty years, so that no statistics can represent a mathematical truth, but only an approximation to mathematical truth.

The most satisfactory statistical results, to which I have been able to gain access, are a series of tables drawn up by Dr. Marsh, Medical Director of the Mutual Life of New York, and presented to the President of that Company some few years ago. I have them copied here in large figures, which will enable you to grasp the conclusions readily.

The total number of cases used was 22,085, though for purposes of comparison, only 4,700 are used, and the tables are as follows:

SOME RECORD OF FAMILY PHTHISIS.			
Age at Insurance and Cause of Death.	Weight.		
	At or above Average.	Below Average.	
To 29 years	All causes	88	141
	Consumption	22	69
	Percentage	25.0	48.9
30 to 39 years	All causes	273	308
	Consumption	31	87
	Percentage	11.3	28.2
40 to 49 years	All causes	328	191
	Consumption	22	27
	Percentage	6.7	14.1
50 years and upwards	All causes	288	151
	Consumption	10	11
	Percentage	3.5	7.3

No HISTORY OF FAMILY PHTHISIS.			
Age at Insurance and Cause of Death.		Weight.	
		At or above Average.	Below Average.
To 29 years	All causes	197	226
	Consumption	35	93
	Percentage	17.8	41.1
30 to 39 years	All causes	412	382
	Consumption	35	73
	Percentage	8.5	19.1
40 to 49 years	All causes	476	271
	Consumption	22	29
	Percentage	4.6	10.7
50 years and upwards	All causes	335	151
	Consumption	9	14
	Percentage	2.7	9.3

Age at Insurance and Cause of Death.		Non-Consumptive Families.	Consumptive Families.
To 29 years	All causes	473	255
	Consumption	135	96
	Percentage	28.5	37.6
30 to 39 years	All causes	903	674
	Consumption	120	136
	Percentage	13.3	20.2
40 to 49 years	All causes	813	596
	Consumption	54	55
	Percentage	6.8	9.2
50 years and upwards	All causes	517	496
	Consumption	24	23
	Percentage	4.6	4.9

I fear I have taken up too much time already, but I would like to give Dr. Marsh's conclusions drawn from these and other tables in his report:

1st. That the history of consumption in any member of the immediate family increases the probability of its appearance in an applicant.

2nd. That consumption in a brother or sister is at least of equal importance as when it has occurred in a parent.

3rd. That persons who are under the standard or average of weight are much more liable to consumption than those above this standard. That the peculiarity of constitution which is indicated by the inability to take and assimilate a proper amount of nutriment indicates a susceptibility to phthisis, or at least is a reasonable suspicion of such predisposition.

4th. That persons who exhibit a robust and well-developed body have little susceptibility to consumption.

5th. That the personal condition of weight and robustness has far more value than the family history in diminishing the liability to consumption; therefore.

6th. The evidence presented by a well-developed body may outweigh the suspicion attached to unfavorable family record.

7th. That these influences of family history and personal weight are of the same grade for every age, and their importance is not lessened by the fact that the individual has reached middle life.

The report shows that a consumptive family record indicates an increased susceptibility of say 30 per cent. This is a fair mean of the results shown by other investigations, which range from 10 per cent. by Louis to 25 per cent. by Walshe and even up to 50 per cent. by others.

It is also to be remembered that in all findings by the Mutual Life the taint was not great, for when the disease included both parents, or 2 or 3 members of the family, the applicant was nearly always excluded, and so such cases do not influence (as they would do anybody) the statistics.

The points which I have been able so imperfectly to bring before your notice are only two. There are one or two others which I would like to mention merely, as very important. I believe they would materially, if the suggestions in them were acted upon, conduce to the lessening of claims from tuberculosis:

1. That your Institute should endeavor to educate the proper authorities to make a law that isolation and disinfection should be carefully carried out in certain forms of tuberculosis at least, as it is in other dangerous infectious diseases, say diphtheria and scarlet fever. I fear it is too early in the civilization of the world to hope that any of us may live to see the day when the law will regulate marriages.

2. That you should suggest to the management of the companies the advisability of having literature sent to every policyholder, giving in the simplest and plainest terms the danger from contagion, some of the early symptoms, and setting forth the fact that it is in most cases a curable disease in its incipency. These policyholders would form a centre, each in his own circle, from which would radiate much useful information,

that could not but tend to do good to the community, and both directly and indirectly advantage the life companies.

3. I believe that it would pay life assurance companies many times over, to spend some money in paying a capable man to go through the country, holding institutes, to which should be brought medical examiners for all companies within a certain radius. Such a director of institutes should be able so to educate examiners along life assurance lines, that most profitable results would surely follow in the matter of more careful, honest, and scientific reports to the head offices of all companies.

Any one of the above three points could well form, I believe, the text for a whole paper and evening's discussion in your learned body.

THE COMMUNION CUP.

JOHN HUNTER, M.B., TORONTO.

HISTORICAL.

"And he took a cup and gave thanks, and gave to them, saying: Drink ye all of it; for this is my blood of the covenant, which is shed for many, unto remission of sins." Ever since the night on which these words were uttered there has rested upon the followers of Christ one of the most imperative and sacred obligations known to humanity.

This sublime ordinance with the tragic settings of its inauguration has clustered around it the most hallowed associations of the Christian's life. It would be an inhuman, if not a sacrilegious act, to disturb such associations by the suggestion of any change, were the need for such a change not made imperative by indisputable facts. For ages it has been an almost universal custom throughout many branches of the Christian Church in serving the sacramental wine for a number of members to drink out of a common cup.

Within recent years this method of serving the wine has met with so much opposition that in a large number of churches the common cup has been replaced by the individual cup. This most salutary change has not come unopposed, for "human nature is much the same in any age." Ancient Christians were quite willing to put astronomers to death rather than change their own views even about such material things as the movements of the earth either on its axis or around the sun. Latter-day saints were ready to leave the Church rather than allow the aid of an organ in the song service. The same spirit and the same prejudices are as ready to oppose the introduction of the individual communion cup. These timid conservative souls—ancient and modern—were and are affected by the same delusion, viz., that physical laws in some mysterious way militate against spiritual ones. Why a suggestion that the earth revolved on its axis—why the sweet strains of an organ reverberating within the walls of the sanctuary—or why the sight of a tray bearing to each individual a clean aseptic cup—should throw a devout Christian into a paroxysm of rage and consternation is quite incomprehensible. Words have been multiplied, and doubtless will be again, in adroit efforts to show that physical laws, classical music and sanitary safeguards should always be kept in abeyance lest they might disturb the mould resting on hoary-headed customs.

The writer has neither the time nor inclination to follow such opposition in and out through all the dark chambers in the catacombs of medieval customs, but wishes rather to set this question reverently in the mid-field of life, where it can be examined by all with the clearer discernment—secular and religious—of modern civilization, and analyzed by many with the search-lights and X-rays of science.

ESTHETICAL.

The manner in which the wine is usually served at the communion table is a splendid object lesson on the tyranny of custom and tradition. As man rose in civilization, customs and habits which were tolerated in the more primitive state, became abhorrent. The danger as well as impropriety of using a common drinking cup has long been recognized. Yet ecclesiastical authority has perpetuated a custom in the Church that civilized society would not tolerate elsewhere for a moment. What member of the Church would invite friends to her tea-table, and then ask them to drink out of the same cup?—although the esthetic effects under such circumstances would be vastly less open to criticism. No such practice would be permitted in the family circle. At banquets where each guest is there by special invitation, and is considered to be socially the host's equal, common decorum, still more esthetic tastes, demands the most scrupulous care that there be no mixing of glasses or dishes.

Watch the communion cup as it passes from lip to lip, and it requires no very vivid imagination to sketch a very unesthetic picture. What more unclean thing could float in the wine cup than the hairs of an unkempt moustache? Dentists and specialists tell us of many diseases of the teeth and mouth that could be discussed in medical journals only, where their loathsomeness would be glossed over under technical terms. Is it any wonder, then, that all manner of disagreeable sensations flash before the minds of many communicants as this common cup approaches them, and every imaginable device is resorted to—the communicant passes on the cup untouched, drinks as near the handle as possible, watches where the last lips rested, so as to avoid that spot, immediately uses the handkerchief to clean the lips, whilst the elder, with commendable foresight, picks out pieces of mucus or floating hairs, etc.

How is it possible that such an unesthetic practice can be tolerated? Only two answers seem plausible. It was established at a time when very little was known in regard to the way in which diseases were disseminated. In our time it is perpetuated out of a sort of superstitious reverence for a custom hallowed by sacred associations. Does it not seem absurdly

illogical "to pass a cup from mouth to mouth in a religious ceremony when the same practice was justly condemned in our homes and in other public assemblages?"

SENTIMENTAL.

Sentiment is one of the most powerful influences that affect human life. What else can send men so fearlessly to the cannon's mouth as the waving of a flag or the strains of a martial anthem. These appeal to the patriotic sentiment. It was the writer's privilege recently to sit at the communion table in Beecher's tabernacle. He sat down with the lonely feeling that he was a stranger and a foreigner; but when a thousand cups in unison with his own passed to a thousand lips, this feeling fled, and was instantly replaced by a consciousness of being a member of a great brotherhood, owing supreme allegiance to one Lord and Master. There is something in the use of the individual cup—by all at the same moment—that creates a feeling akin to the inspiration that Irish, Scotch and English feel when they all rise and drink to the honor of their patron saint. Perhaps, unfortunately for us Canadians, we cannot fully appreciate this inspiration, for whilst such saints as St. George, St. Andrew and St. Patrick are considered worthy by English, Scotch and Irish, yet such is the intensity of our patriotism, the vastness of our country, with its matchless resources, that we may have to wait for the millennium before we can find a saint worthy to be installed as our patron.

It is this feeling of brotherhood that breaks down the barriers of selfishness, and where should it more abound than amongst the members of Christ's Church? The common cup, on account of its being partaken of by one individual at a time, emphasizes the consciousness of isolation rather than of brotherhood, and yet next to unflinching faith in the Master comes the grace of brotherly love. Why, then, should we not have a service that lends an esthetic grace to a sublime ordinance and inspires communicants with a deep sense of the brotherhood that exists between Christ and all His followers.

SANITARY

Whatever differences there may be in our interpretation of history, in our esthetic tastes, or sentiments, we come now to discuss a phase of this question, where we can state facts that are just as indisputable as are the proofs of the existence of a Deity or of any other religious dogma. Civilized people believe that many forms of disease can be disseminated. Such diseases may be divided into two great classes.

ACUTE INFECTIOUS DISEASES

Very familiar, as well as much-dreaded types of this class, are scarlet fever and diphtheria. If a sufficient quantity of the poison—and it may be so little as to be invisible—reaches the mouth or air passages in a person susceptible to the disease, infection may take place. The specific germs multiply very rapidly and produce poisonous products that may be widely disseminated by the blood. The quantity and virulence of these poisons are often sufficient to overcome both the resisting power of the body and that of medical treatment, and thus lead on to a fatal result.

There is no difference of opinion amongst intelligent people in regard to the fact that these diseases are infectious and that there should be strict sanitary regulations governing them. A few weeks ago there was a meeting of sanitary experts in the city to discuss questions pertaining to school hygiene. The common drinking cup at the schools was shown to be a source of extreme danger and the most probable cause of recent epidemics of diphtheria. Suggestions were made as to the best methods of averting this terrible danger.

In the case of some of these acute infectious diseases, such, for instance, as scarlet fever, one attack may produce a life-long immunity. With adults unprotected in this way, a few infected persons partaking of the common cup, would be liable to cause an epidemic after each communion service. This statement can be verified in regard to diphtheria, a disease from which one attack does not produce immunity. One of the chief reasons why it is so much more prevalent amongst children is owing to the fact that they use the same cup, eat of the same apple, pass chewing gum from one to another, etc., etc. Again, it is not unusual for the poison of diphtheria to remain in the nose or throat for weeks after the patient is able to be around, and thus infection might be very readily conveyed to the common cup. Dr. Forbes, of Rochester, found a great number of these germs in the wipings from a cup's rim. A fatal epidemic of this disease in San Jose, Cal., has been traced to a common communion cup, contaminated by a man sick with the malady in its early stage.

This phase of the subject could be discussed indefinitely, but enough has been said to prove beyond any possibility of successful contradiction, that acute infectious diseases can be acquired from the use of a common cup.

CHRONIC INFECTIOUS DISEASES.

It is quite a common sight, and certainly a most pathetic one, to see, on a Sabbath morning, so many sick ones brought

out by their friends to attend the communion service. Many of these never see the church between times—in fact, many are never able to return. A very large percentage of such cases are consumptives. There are other chronic infectious diseases just as dangerous—and far more loathsome—than tuberculosis—the medical term for consumption—but these could be discussed only in medical journals. Tuberculosis is an infectious disease, always acquired from a specific germ. Were it possible to completely exterminate these germs we would be entirely free from tuberculosis. These germs are disseminated most readily by the expectorations of tuberculous people, and under certain conditions may be preserved for a long time. They may be located in the body for months, perhaps years, or even a lifetime without producing any serious results. Only too often, however, their entrance is followed by disastrous effects. The expectorations, as has already been pointed out, are the chief source of infection, and it can readily be understood why a common drinking cup should be such a source of danger. Five samples were examined from a communion cup, in one of our laboratories, and in two of them tuberculous germs were found.

Volumes could be written on this subject, but enough has been said to prove conclusively these two facts—1st, that these chronic diseases are infectious; 2nd, that they can be widely disseminated by the common communion cup. It is simply absurd to say, "Well I cannot believe this because I have not heard of any cases of consumption being contracted in this way." In a disease that begins so insidiously it is simply impossible to say when it was acquired, but this does not militate a particle against the fact that the disease does originate from an infected source, and that the common communion cup can very readily be contaminated with infected sputum. The individual cup completely averts such a danger, as it can be effectively sterilized before and after each service.

In conclusion, what authority has the Church to perpetuate a custom that not only gives a rude shock to every sense of cleanliness and propriety, but also criminally violates sanitary laws and regulations specially designed to protect human life? Better far to grasp the spirit of the poet, who sings:

"My God, and is Thy table spread?
And does Thy cup with love o'erflow?
Thither be all Thy children led,
And let them all its sweetness know."

Selected Article.

THE SOLUBLE FERMENTS OF COW'S MILK.

BY JOSEPH LESPERANCE, M.D. (PARIS), MONTREAL, CANADA.

It is a well-known fact that milk is in itself a complete food, since it contains the three alimentary elements by which all life is sustained, namely, the albuminoids, the fats and the sugars. But, although human life may be indefinitely maintained by the exclusive use of milk, the seemingly paradoxical fact has been established that an artificial mixture of albumins, fats and sugars, although in the same proportions as when contained in natural milk, will not sustain life beyond a limited period. The following experiment made by Lunin demonstrates this interesting fact.

Mice, as well as men, can live indefinitely on natural milk as a sole diet. But when they are fed on artificial milk containing all the chemical constituents of an excellent milk, they die in from twenty to thirty days. In this experiment Lunin prepared his milk in the following manner: The milk was diluted with water, and then precipitated by acetic acid. The flaky precipitate was then washed with acidulated water, leaving it a mixture solely of casein and fat. To this quantity of albuminoid and fatty matter, he added cane-sugar in the proper physiological proportion to represent the carbohydrates. Finally he added the salts that are contained in the natural milk, in the exact quantities in which they are found in that substance. Theoretically this artificial milk constituted a perfect food, since it contained the three principal groups as well as the salts. Nevertheless, the mice on which the experiments were made did not live, although they relished the diet and ate plentifully of the food.

Lunin was studying the rôle played by the mineral salts in nutrition, and at the time when he announced the results of his experience the scientific world was considerably surprised.

It is now well understood that the factor which was lacking in Lunin's artificial milk, that which was necessary in order to make this product capable of sustaining indefinitely the life of his mice, was that chemically intangible constituent, the active living force, in fact the enzymes or unorganized soluble ferments that were destroyed by his method of preparing and treating the milk. This fact explains why sterilized milk and other

sterilized foods have not fulfilled the general expectations of the scientific world. Received at first with enthusiasm by the medical profession, it was gradually shown in the course of time, that they did not constitute an ideal method of feeding. Many medical men, recognizing the lack of result without knowing the real cause of failure, returned to good natural milk, either simply diluted with water or not. Careful observation showed that milks that had not been heated beyond a natural temperature were more easily digested, and gave greater vitality to the system. It was observed that sterilized milks produced in children soft muscles, a generally irregular development, and a weakened resistance to infectious diseases. Some men even stated that they were the indirect cause of infantile scurvy. And these unsatisfactory results were observed even when the very best methods of blending were being used, and the milk had been modified so as to make it, from a chemical standpoint, not only merely resemble mother's milk, but actually almost identical with it.

These facts were verified, but without any reasonable explanation of the cause. However, the work and thorough investigation to which milk has been subjected within the last few years, have thrown an entirely new light on the subject. The constituents which are lacking in sterilized milk, or, more properly speaking, are destroyed when the temperature of the milk is raised to 176° Fahrenheit, are the enzymes, those mysterious ferments which govern the equilibrium of the protoplasm. Not only in the animal kingdom, but in the vegetable kingdom as well, every vital phenomenon seems to be dependent on these ferments. The grain of wheat, planted in the soil, owes its development and growth solely to these special ferments. Under the influence of soluble substances secreted by microbes in the bosom of the earth, the grain of wheat emerges from its lethargic condition and becomes a living organism, capable of growth and reproduction. It has been shown that absolutely sterilized earth is useless for the growth of seeds, and that these do not come to maturity in such soil. (Ref. Nobbe, Dresden.)

The same thing applies to the animal kingdom. Animals kept in an aseptic atmosphere and fed on sterilized foods cannot live. The quantity and proportion of albumen, of carbohydrates and of fats may be perfect, but that particular force which separates and disintegrates them into their ultimate terms of absorption no longer exists, and these food substances become inert. According to Kejavitzin, the disastrous effect of sterilized air breathed, continues even after the animals have again been placed in a normal atmosphere. This author explains, that in breathing ordinary air the microbes inhaled

are absorbed by the leucocytes, which separate the ferments which these microbes contain and spread them throughout the organism, where they regulate oxidation and prevent the accumulation of leucomains and other toxic principles.

It is a path abounding in beautiful discoveries that science has opened. It is found that the malignant ferments, producers of illness and death, are only an accident in nature. If there exists those that are responsible for the shortening of some lives, on the other hand their very kin are they that since the creation of the universe have perpetuated species, and finally the evolution of the higher organisms is corollary to that of the infinitely small. Although there are injurious germs whose secretions disturb the vital harmony and cause a disturbance of the physiological phenomena, yet, by way of retaliation or compensation, there are a much greater number of those whose secretions are of direct benefit. It is true that, as yet, we know but a small proportion of these, but the list is growing and continues to grow as time passes. Let us salute, *en passant*, the noble germs, creators of fine wines, of good ciders, of fragrant vinegars, and of savory beers.

If we have entered somewhat fully into the above considerations, it is because the ferments that are found in milk originate both in the organic cell and in the bacterial cell; the former being necessarily in the milk because they are contained in the organism and in the gland cells which give rise to the milk; the latter being accidental, but at the same time always found in the milk, since they are secretions of the bacteria which exists everywhere and consequently gain entrance into the milk, many of them even before it leaves the galactiferous ducts. These bacterial ferments were thoroughly studied long before the cellular ferments, and since the observations and work of Duclaux are known intimately. They are for us less interesting than the others, and to them, the cellular ferments, we would more particularly devote our attention.

The clear ideas which we at present possess, regarding the soluble ferments of milk, have taken a long time to come to light. While the first work on the digestive ferments of the human alimentary canal dates back some fifty years, only five years have elapsed since any serious attention has been given to those of milk. After having discovered ptyalin in the saliva, pepsin in the gastric juice, and the tryptic ferments in that of the pancreas, science rested. Bacteriology acquired a tremendous impetus from the ideas of Pasteur; a keen interest was aroused that engrossed all thinking minds. But by a return to the original ideas, bacteriology, in discovering the secretions of the microbes, brought these same thinkers back to the study of the secretions of the organic cells, and demonstrated that

the two are identical, and that there is no biological difference between the constituent cells of our organism, and those minute cellular individuals, the microbes.

Babcock and Russell of Wisconsin were, so far as we can learn, the first to demonstrate the presence of soluble ferments in milk.

In the earlier days the various phenomena that take place in milk were explained as being solely chemical—the reaction of one body on another. Then, in the time of Pasteur, the facts became a little better known, and all the transformations of milk were ascribed to the action of bacteria. Lloyd and Freudenreich made known the considerable part played by bacteria in the maturing of Cheddar and Emmenthaler cheeses.

Babcock and Russell, struck by the fact that all the changes taking place in milk could not be explained by the activity of bacteria alone, undertook a long series of experiments in order to elucidate the apparent difficulty. They experimented partly with natural milk and partly with milk that had been worked by cheese-makers. To samples of fresh milk they added in some cases chloroform, in others ether, both of them substances which arrest bacterial growth. They found that coagulation of the milk set in within a few days without any corresponding increase of acidity. In these experiments the anæsthetic would have prevented coagulation if that phenomenon were due entirely to bacterial life.

Then, as Conn had announced that saprophytes possessed the power of secreting an enzyme analogous to rennet, and capable of coagulating milk, and as Duclaux, in a lengthy communication, had brought to light the important rôle played by the saprophytes in the phenomena of the maturing of cheeses, Babcock and Russell determined to investigate the question as to whether the coagulation of the milk in spite of the use of the anæsthetics had been caused by bacteria. They took every precaution, surrounding themselves with every safeguard in order to prevent the contamination of the milk by saprophytes. The udder of the cow was carefully sterilized, the first milk was thrown away, and then the balance was milked direct into bottles containing an excess of an antiseptic preparation. By this process the bacteria with spores which produce the coagulating ferments were excluded, and if by chance any of them, coming from the lactiferous ducts, reached the milk, they were immediately paralyzed. Under these conditions which would eliminate all bacterial activity, the same phenomena of coagulation and transformation of the casein took place as before, and in the same time. These experiments were repeated with all antiseptics known to arrest microbial reproduction, such as fluoride of sodium, salicylic acid, etc., and

the results were always the same. Moreover, in proportion to the age of the various samples of asepticized milk, these exhibited a gradual increase in the percentage of albumoses, formed at the expense of the caseine. For example, in milk twelve days old, the proportion of the products of this digestion was 30 per cent., while in the same milk, two hundred and forty days old, the proportion was 63 per cent. Babcock and Russell then arrived at the conclusion that besides the organized ferments, there are in milk other ferments which are inherent in the milk itself. In pursuing their investigations further, they found these ferments in the milk of all the mammifers that they studied (ass, mare, goat, sheep, sow, buffalo, and woman). In the cow's milk it is particularly abundant and more easy to isolate.

To this ferment they gave the name of Galactase, and classified it in the same family as Trypsin, the pancreatic enzyme.

This view of the matter was confirmed in the very same year. Bertrand and Bourquelot, without knowing anything of the work of Babcock and Russell, demonstrated by other processes the presence in milk of oxidizing ferments. As long ago as 1881, Arnold had found that fresh cow's milk became blue on contact with tincture of guaiac, and that this reaction is no longer produced if the milk is heated to a temperature of 80°C. In 1890 Kowalesky established undeniably that the same reaction takes place in milk when mixed with old turpentine. But at that time this reaction was attributed to the presence of ozone. Later it was recognized that free ozone cannot exist in the system, and Bertrand and Bourquelot demonstrated that the reaction of milk toward oxidizing agents is due to the presence of a ferment. Of itself it is powerless to oxidize oxidizable substances without the assistance of an intermediary agent highly oxygenated, such as the tincture of guaiacum, old turpentine or oxygenated water. But, when these agents yield their oxygen to this ferment, the latter is able to hold it, and in consequence to oxidize any oxidizable substance with which it comes into contact. For example, if some drops of tincture of guaiac are added to fresh milk, this does not change color. But if at the same time some drops of oxygenated water are poured into the milk, a blue color begins to show itself at once. The ferment has absorbed a portion of the oxygen, and coming into contact with the guaiac has oxidized the latter. Thus this ferment belongs to the family of anaerobes. At this same time Dupouy, and in the following year (1898) W. Raudnitz, studied this oxydase and found that it is present in the milk of the goat, the cow, and the ewe, and that it is absent, or that its action is very weak in the milk of the ass, the mare, the dog, and in human milk. Marfan and

Gillet have also studied this ferment, and confirm its presence in the milk of the cow.

In 1901 Spolverini took up this line of research and recognized in cow's milk the presence of pepsin and trypsin. Working on milk aseptically treated, and in which perfect asepsis was maintained by thymol, he placed in a drying-stove, at 104° F., various quantities of milk, some acidified for the research for pepsin, other alkalized for the research of trypsin. After a certain time he determined the quantity of soluble albumin in it by the biuret reaction. A boiled sample served as a means of verification. By proceeding in this manner, Spolverini found that the pepsin and trypsin were to be met with in all the milks, but were most abundant in cow's milk. The proportion diminishes in the milk of the dog, the goat, human milk, and that of the ass.

Besides these ferments, of which we have already spoken, still another is to be found, which Spolverini identifies with the glycolytic ferment of the blood. If the sugar contained in a given quantity of fresh milk is determined, and the latter is placed in a drying-stove at a temperature of from 38° to 41°C., and the quantity of sugar is again determined after a lapse of twenty-four hours, it will be found that the quantity of sugar has considerably diminished. A portion has been destroyed. This is by the action of a glycolytic ferment. This ferment shows itself fairly active in cow's milk, but slightly less so in other milks. Moreover, in 1901, Luzzati, Boilchini, and Marfan, and in 1902, Gillet, as well as Spolverini, separated still another ferment that belongs to the family of hydrolytic ferments. Under the influence of this ferment monobutyrim resolves itself into butyric acid and glycerin. These authors operated by distilling a mixture of milk and monobutyrim, and in then determining the acidity of the distilled products. They encountered this reaction of splitting up monobutyrim in the milks of the woman, dog, cow, goat and ass, stronger in the former, and less energetic in the latter. They have agreed upon giving this ferment the name of lipase, a name which Bourquelot had given to a ferment of the same nature, which Hanriot was the first to discover in the blood.

Summing up the various researches and discoveries made in connection with cow's milk, we find then, that this milk contains numerous ferments. We have determined definitely the presence of trypsin and of pepsin, of the lipasic and oxidizing ferments, and of a glycolytic ferment. There is, moreover, reason to expect further discoveries in this direction, and this is not improbable when the extremely complex nature of milk is taken into consideration.

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Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, H. J. HAMILTON, C. J. COPP
AND F. A. CLARKSON.

A Method of Dispensing with Rubber Gloves.

Dr. Jno. B. Murphy reports in the *Journal of the American Medical Association* a new method of covering the hands and arms with a solution of rubber. It may also be applied to the surface about to be operated on. Pure gutta-percha chips are dissolved in sterile benzine or acetone. The hands are sterilized as usual, thoroughly dried and then covered with this solution, which dries without rubbing. The result is a thin coating of a material insoluble and impervious. It is easily removed with benzine.

F. A. C.

Treatment of Lobar Pneumonia.

Prof. W. Gilman Thompson, of Cornell University (*Jour. Amer. Med. Assoc.*), points out that the care of the heart is the most important purpose of our treatment of this self-limited disease. A common mistake is to over-stimulate a heart which if left to itself would act well enough. Frequent changes in the form as well as the quantity of the drugs employed are of great advantage. He has found that the cold tub bath is very unfavorable in pneumouia, and has abandoned it entirely. Many patients are dosed with "specifics" and with expectorants to their own detriment. In those exceptional cases where the bronchial secretion is abundant, atropine sulphate (gr. 1/200) is indicated. Of the "aborted" pneumonia, so often spoken of by a certain class of practitioners, Dr. Thompson knows nothing. "I have never been convinced," he says, "that a genuine pneumococcus lobar pneumonia, with all its definite characteristics, can be systematically cut short in full career by any system of treatment at present at our command. There are plenty of mild cases to be seen to-day of influenzal type, in which there is a suspicious patch of apparent consolidation, which terminate in resolution of their own accord in two or three days." Usually little attention is given to the gastrointestinal tract, whereas tympanites and indigestion are just as urgent symptoms in this disease as in typhoid. Topical applications of all kinds are useless, except for the relief of pain. Above all, proper intervals of rest are absolutely necessary, in which the patient is free from incessant efforts at medication.

F. A. C.

Treatment of Serous Effusions.

Barr, in the *British Medical Journal*, gives details of a new method of treating pleurisy, pericarditis and ascites, by withdrawing a portion of the fluid and injecting adrenalin solution. The amount of the suprarenal extract used depended upon the serous cavity involved. In a case of pleurisy he injected one drachm, in ascites two or three drachms, but in the pericardium of a boy he found 40 minims produce unpleasant symptoms. To prevent adhesions he introduces sterilized air after the adrenalin. The clinical instances which he cites would seem to show that this method gives very satisfactory results in those cases in which the fluid continues to accumulate in spite of repeated aspirations.

F. A. C.

Acrophagy.

This is a very common accompaniment of gastro-intestinal neurosis, and is usually involuntary. The patient suffering from nervous dyspepsia has a fulness of the abdomen, which he attributes to gas. In his efforts to relieve himself by belching, he unconsciously swallows air till the stomach is distended, and then the supposed flatus is eructated. Sometimes, however, the gas passes through the pylorus into the bowel—a common condition in hysteria. The diagnosis is usually easy. When the eructations are too numerous to be explained by gastro-intestinal fermentation, and when the patient can belch at any time he is asked, air-swallowing is the cause of the trouble. The treatment is that of any other gastric neurosis— isolation, rest, and a liberal diet, together with bromides, valerian or chloroform water.—*Mathieu, Gazette des Hopitaux.*

F. A. C.

Present-day Treatment in Pulmonary Tuberculosis.

Isolation, plenty of sun-light and an abundance of fresh air constitute the sum of present-day treatment in pulmonary tuberculosis. With these freely granted to a patient, forced feeding, dieting and drugs according to indications will be of some avail. Without the three cardinal requirements the others may as well be totally banished so far as any real or lasting good is concerned.

And tuberculosis will be very loathe to occur at all if a degree of isolation, with free sun-light and abundant fresh air, can be secured.

It is this view that supports quite all reform movements in the better housing of factory employes, school children, amusement-seekers and travelers, in fact all who voluntarily or per force are required to come together under more or less common artificial conditions.

Sanitoria for consumptives may be advantageous, but we are inclined to believe tent-life or residence in half-open cottages better.

A change of climate becomes significantly favorable because one is either forced or encouraged to an out-of-door life; and because such change is usually to a "land of sunshine."

Isolation, air, sunshine, together with a fair amount of exercise and wholesome food, should call a halt upon the forces of the "great white plague."—*Clinical Review*.

Complications of Diphtheria.

Boutin, *Progressive Medicine* (March, 1904), has made a careful study of the gastro-intestinal disturbances which frequently precede the sudden death occurring during the convalescence from diphtheria. For five or six days after the onset of the angina, but often much later and in the midst of what appears to be a satisfactory convalescence, the patient develops anorexia, followed by vomiting, violent abdominal pain and either constipation or diarrhea. Soon the feeble and rapid pulse is followed by collapse and death.

The anorexia, which is especially profound, is a valuable sign of threatening danger, and should excite anxiety. Vomiting is also an important sign, and may be persistent. In general the danger is proportionate to the vomiting.

The same article also offers an explanation for the increased frequency of sudden death during convalescence, as well as the increase of post-diphtheritic paralysis since the general use of antitoxin. Formerly most of the severe cases died; now these lives are spared for the time necessary for these complications to manifest themselves.

F. A. C.

LARYNGOLOGY AND RHINOLOGY.

IN CHARGE OF J. PRICE-BROWN.

Bleeding Polypus of the Nose.

(St. Clair Thompson, *Jour. Lar., Rhin. and Otol.*, April, 1904.)
 This is the report of two cases of this rare disease. The growths were round and red, and attached in each case to the septum. The larger one was of the size of a cherry stone. Each was removed by snare, and the base seared with the electro cautery. There was no return after an interval of three months. Microscopical examination showed the growths to be fibro-angiomata.

Nasal Polypi in a Boy aged Seven Years.

(Stuart Low, *Jour. Lar., Rhin. and Otol.*, April, 1904.) This case is reported on account of the exceeding rarity of the occurrence of nasal polypi in so young a subject. Professor Hajek, in a very extensive practice, had never seen the disease at so early an age. (*The abstractor, several years ago, reported a case as occurring in a girl at the age of five years. The polypi were numerous and large. The mother stated at the time that the child had been treated by another rhinologist for several months for the same disease when only two-and-a-half years old.*)

Treatment of Ozena by Collargol.

(Roques, *Archives Internationales de Laryngologie*, Feb., 1904.) The author reports a number of cases in which the result of treatment with collargol was very gratifying. The method was as follows: The nasal mucosa is first cleansed from all crusts and discharge; after drying, a powder composed of collargol and sugar of milk in the proportion of one in thirty is insufflated twice daily. As the condition improves the proportion of collargol and the frequency of insufflation are lessened. The powder acts better than solutions or ointments, and a cure should take place in four or five days. The powder should be insufflated along the floor of the inferior meatus, in order to reach the posterior wall of the pharynx. A little of the powder should be directed toward the septum and superior turbinate.

The Cure of Tic-Douloureux.

(De Champeaux, *Archives Internationales de Laryngologie*, Aug., 1903.) The author reports the case of a woman who had suffered for several years from facial neuralgia, and who had treated for it unsuccessfully in many ways. From the expression of her face and the presence of crusts in the nose, he suspected the presence of adenoids. Their removal cured the rhinitis and also the tic-douloureux.

Epidemic Sore Throat from Suppurative Mammitis in Cows.

(French, *British Medical Journal*, April 9, 1904.) This is the third report of epidemic sore throat, having as origin suppurative mammitis in cows, which has appeared in the *British Medical Journal* during the last few months. There is great similarity in the three reports, that of French being very comprehensive. The cause is the consumption of curdled milk, sometimes containing pus, which has been drawn from the udders of cows suffering from mammitis.

The disease in the human subject is ushered in by chilliness, malaise and sore throat about twenty-four hours after infection. The appearance is that of lacunar tonsillitis or quinsy, but not of diphtheria. The glands of the neck enlarge, harden and become matted together. In rare instances suppuration occurs. Neuralgia is nearly always present. The temperature rose to 103, and in one instance to 107. Among complications may be mentioned swelling of the limbs and joints, resembling rheumatism, the presence of a rash in some cases, and occasionally erysipelas of the head and face. Fatal terminations rare. Recrudescence of symptoms a common factor.

Treatment: All ordinary treatment for throat disease unavailing; but injections of antistreptococcus serum, immediately followed by good results. In twelve hours temperature would become normal, followed by rapid recovery.

Bacterial examination revealed the presence of numerous streptococci, and although there were some bacilli present, cultures only produced a repetition of the same germ.

Conclusions: The disease is an erysipelatous infection of the throat caused by these micro-organisms. They eventually find their way into the blood, causing general septic infection. They also attack the neurilemma of nerves producing the neuralgia.

Cheesy Empyema of the Nasal Accessory Sinuses.

(Steida, *Arch. of Otol.*, vol. xxxii., No. 5.) Three cases of rhinitis caseosa are described, leading to disfigurement and the formation of fistulas. They required external operation, and recovered. Internal operation, if practicable, is in the first instance to be preferred.

Sessile Fibromata at Anterior Extremity of Left Vocal Cord, Partially Removed by Forceps and Completely Extirpated by Galvano-Cautery.

(Dundas Grant, *Jour. Lar., Rhin. and Otol.*, April, 1904.) Patient, a widow, aged 51, had suffered from aphonia for three years. The anterior commissure was occupied by pink sessile growths situated on the left vocal cord. In July, 1903, these were partially removed by forceps. The voice was somewhat improved; but it was found impossible to remove the growths completely by this means. In October a finely pointed cautery was applied lightly to one of the growths. This was repeated at intervals of two weeks to each nodule successively. By the end of December all had been cauterised, the growths had disappeared, and the voice was restored. Although there was still some congestion, the vocal cords were normal in outline.

A Study of the Condition of the Upper Air-Passages Before and After Intubation of the Larynx.

(Louis Fischer, *Archives of Pediatrics*, Feb., 1904.) This paper is based upon two series of cases, one group being intubated in hospital practice, the other in private practice. The former contributed ten cases, the latter twenty-six cases. All were diphtheritic. Antitoxin was used in all; and rubber tubes instead of metal were used in every instance. Most of the children were rachitic. And all had abnormal throats; enlarged tonsils, adenoids, or chronic rhino-pharyngitis being invariably present. In his conclusions Fischer emphasizes two important points: 1. The tolerance of the larynx to a tube for many weeks: one case wore a tube for twenty-five days, another for twenty-six days. 2. That a proper fitting tube of rubber produces no chronic inflammation in the larynx. Finally, each of the cases was questioned carefully as to the production of catarrh by the wearing of the tube, and in every instance the answer was negative.

OPHTHALMOLOGY AND OTOTOLOGY.

IN CHARGE OF J. T. DUNCAN, M.B., M.D., C.M.

Episcleritis.

In the *St. Paul Medical Journal* is a good epitome of an article on the above subject by Don. M. Campbell.

1. *Episcleritis* signifies an inflammation above the sclera and presumably below the conjunctiva that is involving the episcleral tissue, which is a thin layer of reticular tissue joining the sclera to the conjunctiva.

2. *Scleritis*.—Which is designed to cover those cases of inflammation of the whole or more frequently sections of the sclerotic coat.

Either of these may be acute or chronic.

Signs and Symptoms of Acute Episcleritis.—Lachrymation, feeling of discomfort or sensation of foreign body in the eye. Moderate tenderness to pressure; and what is characteristic of the condition, a circumscribed red elevation over the affected area, carrying over it the uninflamed conjunctiva. In some cases this elevation is as large as a quarter in size of the eyeball, and in appearance is suggestive of a sarcoma of the sclerotic.

Signs and Symptoms of Acute Scleritis. *Lachrymation and Photophobia*.—There is no circumscribed swelling over the area of inflammation, but a peculiar bluish purple, frequently

sharply circumscribed area of redness which is deep-seated in the sclerotic coat, the conjunctiva passing undisturbed over the inflamed area. It is tender to the touch and frequently the pain is quite severe. Several areas in the sclerotic may simultaneously be involved or the whole sclerotic may be the seat of the inflammatory action.

(Note that in episcleritis the inflamed part is elevated; in scleritis it is not.—D.)

Treatment.—The local treatment should consist of such measures as are best calculated to combat inflammatory action. Rest, chiefly physiologic, by means of non-use of eyes, protection from light and paralyzing the ciliary muscle by atropine.

In some cases associated with high tension eserine may be indicated.

Hot antiseptic eyebaths: Local blood letting, by leeches, artificial or otherwise. In order to secure the easiest use of the eye all refractive errors should be corrected, as also should all imbalances of the muscles. Disinfection of the conjunctival sac can be secured by argyrol, protargol or boric acid. Adrenalin, while it has a wonderful influence in temporarily controlling congestion, in the author's experience is not curative, and may be in some cases very undesirable, excepting, perhaps, for very brief periods of time; the reactionary congestion being very undesirable.

The constitutional treatment must aim at, above all things, a correct mode of life as to exercise, diet and the proper functional activity of the skin, bowels and kidneys.

It is impossible to lay down a general plan of diet for these cases. The dietary that the individual's digestive organs can properly take care of is the best. In any individual case this can only be carried out by careful study. In the way of internal medication salicylate of soda is the drug which gives the best results, but in order to secure the beneficial effect of the drug it must be fresh and pure and given in solution, and because it is so very quickly eliminated the dose must be frequently repeated.

The Treatment of Dacryocystitis (Inflammation of the Lachrymal Sac) by Extirpation of the Sac.

Etienne Rollet (*The Ophthalmoscope*) advises the removal of the sac: (1) In simple dacryocystitis, when it is old and rebellious, when the introduction of probes is very painful or impossible, and when a speedy cure must be effected; (2) in cases of lacrimal tumor with mucous or purulent contents; (3) chronic lacrimal fistula; (4) tuberculous dacryocystitis. In phlegmonous dacryocystitis the operation is least indicated, and advisable only after the inflammation has subsided.

The author has removed fifty sacs. Twenty-seven cases were watched for periods ranging from six months to seven years. Eighty-nine per cent. were cured. In 67 per cent. lacrimation did not exist; in 22 per cent. it was present only when the patient was exposed to the wind or cold; in 11 per cent. it persisted.

Three theories have been advanced to account for the good results in this class of cases:

"(1) That the lacrimo-nasal canal becomes formed anew, a view that I have opposed on both clinical and experimental grounds;

"(2) That the watering of the eye disappears with the cause of the hypersecretion, namely, the lacrimal inflammation. This theory explains the disappearance of the lacrimation often witnessed immediately after the removal of the sac, or in other words, after suppression of the suppuration causing the lacrimal irritation;

"(3) That the operation is followed by an atrophy of the lacrimal gland. This theory explains those cases where the watering of the eye persists for some little time after ablation of the sac. An experiment performed by me in 1896 upon a dog, showed that an atrophy, macroscopical and microscopical, of the lacrimal glands followed five months after extirpation of the animal's lacrimal sac. Tscherno-Schwartz in 1901 reached the same results after experiments upon rabbits."—*Am. Jour. of Ophth.*

Sympathetic Ophthalmia Followed by Loss of Hearing.

Dr. Albert Blatscheck relates the history of a child, aged twelve years, who suffered the loss of the left eye from an injury with a gun-cap. Sympathetic ophthalmia of the other eye followed. In the course of two months the right eye was completely destroyed, and enucleation of both bulbi followed. Soon after the enucleation of the injured eye, when the sympathizing eye was at its worst, the hearing became affected. Fever, delirium, and hyperesthesia of the ears followed, and gradually complete deafness ensued. The examination showed deafness of central origin. No other nerves were affected. Dr. M. Sachs, of Vienna, reported a similar case, following double cataract extraction. Deafness came on, but disappeared in four or five weeks. Enucleation of the eye was followed by improvement in the hearing. The author concludes that the neuritis and perineuritis traveled along the optic tracts to the external geniculate bodies, thence to the internal geniculate bodies, and thence to the acoustic nerves.—*Zeit. fuer Augen.*

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF ADAM H. WRIGHT, K. C. McILWRAITH, FRED, FENTON AND HELEN MacMURCHY.

A Sign of Pregnancy.

Dr. H. L. E. Johnson announces in the *Journal of the American Medical Association* a new sign of pregnancy, which he describes as follows: "This sign is observed as early as the fourth week, or possibly earlier, and consists of an intermittent softening and hardening of the vaginal portion of the cervix uteri with, in many cases, a change of color from a pale violet to the normal pink hue, or the reverse. These changes in consistence and color are rhythmic, more or less. The alternate softening and hardening is easily detected by digital touch, while changes in color may be seen through a speculum." He has observed it a very large number of times, and has found it invariably present in cases of pregnancy.

Purgative for Pregnant Women.

Lutaud, according to *Journal de médecine interne*, for January 15th, gives:

R	Castor oil.....	30 grammes (1 ounce)
	Syrup of rhubarb	20 grammes ($\frac{2}{3}$ ounce)
	Alcohol	15 grammes ($\frac{1}{2}$ ounce)
	Peppermint oil.....	2 grammes (30 minims)

M. For one dose.

Plastic Surgery in a Maternity Hospital.

Dr. Barton Cooke Hirst, of Philadelphia, contributes an article to the current number of *The Journal of the American Medical Association* on "Plastic Surgery in the University Maternity for the Year 1903." For several years the doctor, in common with most enlightened physicians, has repaired all the injuries to the parturient canal during the puerperium. Operation is, of course, under anesthesia. It is found that an operation on the cervix before the fifth day is often followed by infection of the endometrium. At the end of a week this is not the case. During 1903 the cervix has been repaired in fifty-three cases, and the anterior vaginal wall in forty-two cases.

Tubal Pregnancy.

There are not very many cases of extra-uterine gestation where the duration of pregnancy could be accurately determined, and this adds to the interest of a case reported by Dr. Duncan, of the Middlesex Hospital, before the British Gynecological

Society at its meeting last month. Dr. Duncan's patient was a healthy looking, but pale, woman, of a very active temperament. Pregnancy was not suspected. On account of endometritis it was found necessary to curette the uterus on November 16th, 1903, and the patient did well till November 25th, having had neither pain nor rise of temperature up to that date. On that date, at 7 p.m., the attending physician received word from the nurse that the patient was suffering from "pain in the chest and indigestion." Going at once to the patient he found her collapsed, pulseless, semi-conscious, and tossing about in the bed with gasping respiration. Dr. Duncan was sent for, and with the assistance of two other medical men, performed abdominal section, preceded by saline transfusion. The abdominal cavity was full of liquid blood with some clots, the right uterine appendage was normal, but the left uterine appendage presented a small round perforation near the uterine end. The broad ligament was transfixed and tied in the usual way and the tube and ovary removed. The patient, though in a most dangerous condition during the operation, and for some hours afterwards, made a satisfactory recovery. Dr. Duncan was able to ascertain that conception had occurred November 6th. It will thus be seen that rupture of the gestation-sac occurred nineteen days after conception, and ten days after the curettement. There is in the literature only one other case in which rupture took place so early, viz., Dr. Rumley Dawson's case, reported to the Obstetrical Society of London in 1893. In this case rupture occurred on the fifteenth day.

Editorials.

EDUCATIONAL OVER-STRAIN.

June and July are the months when most of the examinations in our secondary and primary schools are held. There are too many of them, and the pressure on the children, younger or older, is too heavy. In the eye of the law and to the *mens medica*, the age of adult life is about twenty-one years. But we heard a clergyman, not long ago, in the pulpit, refer to "young men of fourteen." That is it. Hurry everything on, and hurry everything through. Try to do too much and do nothing well. Expect children of fourteen to perform intellectual work that the brain and the body of a child of fourteen are not intended for, and that nature has not prepared for at that time. Whose fault is this? We have no hesitation in saying that it is the parents' fault. We know that the Education Department is partly to blame, and that inspectors, principals and teachers are partly to blame; but the real trouble is with the parents, and with the system that endeavors to make all children, clever or stupid, nervous or phlegmatic, romps or prigs, as much alike as the peas in a pod. It cannot be done, of course, but harm can be done by the attempt.

Said a teacher the other day, "I could do nothing with our new grade time-table. Fifteen minutes for this, and ten minutes for that, and so many new subjects. And I just tore it up and put it in the waste-basket, and now if I want an hour for drawing I take it and try to teach them something when I am at it." But such courage is not common.

Hear also a wise man who is superintendent of schools in a large American city: "It is not mental activity that hurts. It is the foul air, the bad seat, the unequal heating of the room, the poor lighting. Study doesn't hurt." Doesn't it? We object to foul air, poor light, etc., as much as the superintendent, and more, if possible. But in the very same State a physician was called to a boy of eight years old, who was delirious and continually repeated, "Angy two times meet me on a pond." The next day the patient was rational but remembered neither what he was saying nor the doctor's visit.

Finally it was discovered that he was afraid to go to school because there was some lesson he could not learn, and the words were identified as follows: "An angle is two lines meeting at a point!" Quite so. An eight-year-old understands "a pond," but not "a point."

Everybody wants to be ahead of everybody else. Everybody wants his child to be ahead of everybody else's child. Socrates thought that the easier and the nobler way was not to be envying and criticising others, but to be improving ourselves. Ruskin thought that to provoke a boy, whatever he is, to want to be something better, or, wherever he was born, to think it a disgrace to die, is the most entirely and directly diabolic of all the countless stupidities into which the British nation has been of late betrayed by its avarice and irreligion.

But Socrates and Ruskin are unknown to the democracy and we who still believe in gentler and nobler things must try to keep the torch of truth burning, and influence public opinion, as physicians and citizens, in what we know to be the right direction.

SANITARIUM FOR CONSUMPTIVES AT CALGARY.

A sanitarium for the treatment of pulmonary tuberculosis is being erected at Calgary, N.W.T. The building now in course of erection will be two stories high, with a stone foundation. It will be one hundred feet long, and at the centre forty-eight feet in depth. There will be an eight-foot verandah at three sides of the building, which has a southern exposure and sloping ground. On the ground floor there will be recreation and reading rooms, consultation room, dining room, kitchen, pantry, store rooms and nine bed-rooms. On the second floor there will be twelve bed-rooms, six of which will be sun-rooms almost completely surrounded by glass. The building is being so constructed that additions can be easily made. Besides this main building there is a sanitary annex, which will contain all the lavatories, etc. There will be erected a number of modern cottages with canvas walls. Dr. Alfred Ernest Wills (Trin. '89) will be the Physician-in-charge.

CIGARETTE SMOKING.

We have heard a great deal about cigarette smoking in Canada during the last few months. The question has been discussed at both Parliaments in Ottawa and Toronto. An army of good women paid a special visit to Ottawa in hopes of getting legislation which would prevent the manufacture and sale of cigarettes in Canada. The discussion which was carried on by the members of Parliament was both interesting and entertaining. One prominent legislator, who knows a good deal both about eating and smoking, informed the good women that indigestion was quite as frequently caused by bad cooking as by good smoking.

It is always unfortunate that would-be reformers assume an attitude which is so extreme as to be simply absurd. We are quite in sympathy with those who believe that cigarette smoking is in practically all cases injurious to children, and sometimes injurious to adults. We will always support everything in the way of legislation which will minimize such evils. Cigarettes should certainly not be sold to young boys. While strongly supporting certain restrictions and limitations, we desire to point out certain rather important mistakes in the arguments used by some radical reformers. The chief mistake is the assertion that cigarette smoking is the worst form of tobacco smoking; on the contrary, cigarette smoking is certainly the least injurious method of using tobacco, even inhaling does not fill the lungs with smoke as some assert. As pointed out by the *New York Medical Journal*, only the larynx and upper part of the trachea could be touched in this way. The same journal goes on to say that the most powerful effects of tobacco are to be obtained from the chewing habit, next in order comes the use of the cigar, which includes to some extent both smoking and chewing, non-absorbent porcelain pipe, the briar, the clay "cutty," and the porous meerschaum, continuing the descending scale which ends with the much maligned yet comparatively harmless cigarette. Under such circumstances it would be absurd to enact a law forbidding the sale of cigarettes and allowing the sale of every other form of tobacco.

UNIVERSITY OF TORONTO, FACULTY OF MEDICINE.

Arrangements have been made by the Faculty to conduct a Post Graduate Course, extending for two weeks, immediately preceding the meeting of the Ontario Medical Association. The programme will include operations, and surgical and medical clinics in the various hospitals, and also clinical laboratory methods and practice in the laboratories of the University. The fee of \$10 will be charged for the clinical laboratory work. The Course will begin on Wednesday, June 1st, when a timetable may be obtained in the Secretary's office. Practitioners who wish to take the Course are requested to notify the Secretary before coming to Toronto.

THE METRIC SYSTEM IN PRESCRIBING.

The *British Medical Journal*, in a recent issue, published a few notes about the metric system of weights and measures as applied to the writing of prescriptions. It does not pretend to give anything new on the subject, but simply certain features which apply to the every-day work of the prescribing physician. It, however, expresses a somewhat important opinion to the effect that it is hopeless to endeavor to write equivalent formula in the two systems. The metric system can hardly become practical until we adopt it in its entirety, and drop the old system. Such a radical change will probably come in the near future; in the meantime the majority of practitioners and druggists will continue to use the old system for a time.

Those who wish to gain some practical idea of the new system should purchase a set of metric weights and measures, which can be obtained at a trifling cost. By weighing and measuring a few substances they would soon become accustomed to thinking in metric quantities. Until we do this we cannot successfully use the metric system in the writing of prescriptions.

CANADIAN MEDICAL ASSOCIATION.

There was for some time an element of doubt as to the most suitable dates for the next meeting of the Canadian Medical Association. It has, however, been definitely decided that it will be held at Vancouver, B.C., August 23-26 inclusive. The transportation rates have been arranged for as follows: Toronto and return, \$62.40; Montreal and return, \$68.00; St. John, N.B., and return, \$76.50; Winnipeg and return, \$45.00; and by paying an additional \$10.00 each holder of a ticket on his return may go to St. Louis via St. Paul and come back to Canada via Detroit, either by the G.T.R. or C.P.R. The berth rate each way is for Toronto \$17.00. California and Yellowstone Park may also be visited after leaving Vancouver. We are not certain that many will go from Toronto, but we are glad to state that a number of physicians in various parts of Ontario are making their plans to attend the meeting during their summer holiday. It is rather unfortunate that the dates fixed will prevent the Toronto physicians who go to the meeting from returning to their homes in time for the Exhibition in that city. As, however, the outside attendance at the Exhibition during the first few days is small this objection cannot be considered very serious. Dr. Tunstall, the President, tells us in a recent letter that he is looking for a good contingent from Toronto and Ontario generally.

Graduates of Queen's.

Thirty-seven students have been granted their M.D. degrees by Queen's Medical College. R. W. Bailey, M. E. Branscombe, B.A.; W. C. Brown, J. S. Carruthers, J. C. Caskey, A. K. Connolly, T. J. Costello, E. W. DeLong, A. C. Driscoll, A. D. Falkner, L. A. Ferguson, A. A. Ferguson, J. V. Gallivan, W. Gibson, J. J. Gillespie, J. R. Goodfellow, J. A. Graham, T. J. Gray, L. W. Hoppins, E. C. Kinead, A. J. Lalonde, G. C. Leach, B.A.; R. A. Lee, A. T. Munro, F. C. McCullough, H. A. McDonald, M. McGonigle, N. I. Pennock, Miss Victoria Reid, B.A.; E. J. Robinson, S. H. Rutledge, A. H. Singleton, B.A.; N. Smith, H. Tandy, B.A.; E. J. F. Williams, B.A.; C. S. Vanness, J. M. Young, B.A.

Personals.

Dr. J. R. Lancaster (Tor. '95) is now practising in Tilsonburg.

Dr. Geo. W. Fletcher (Tor. '02) is practising in Wilkesport, Ont.

Dr. G. Sterling Ryerson spent the Easter vacation at Atlantic City, N.J.

Dr. Osler, of Baltimore, Md., spent a portion of Easter week in Toronto.

Dr. Montizambert, of Ottawa, spent Easter week in New York City.

Dr. J. Edgar Davey was married to Miss Flatt, of Hamilton, April 20th.

Dr. W. A. Baker (Vic. '90) has removed from Bobcaygeon to Lakefield.

Dr. A. T. Steele (Tor. '01) has removed from Arva to Shelburne.

Dr. Bruce Riordan, of Toronto, paid a short visit to Boston early in April.

Dr. R. D. Rudolf, of Toronto, has been appointed surgeon of The Light Horse.

Prof. A. B. Macallum, of Toronto University, will visit Europe sometime in May.

Dr. J. A. Campbell (Tor. '01) has succeeded to the practice of Dr. Munro, of Wheatley, Ont.

Drs. Algernon Temple and Allan Baines visited New York April 19th, and remained for a week.

Dr. Walter King-Dodds, of Cincinnati, O., paid a visit to his parents in Toronto during Easter week.

Dr. Walter Johnston, of Carlton street, Toronto, was married April 20th, to Dr. Margaret McCallum.

Dr. W. H. B. Aikins, of Toronto, after spending two weeks in New York, returned to Toronto April 16th.

Dr. E. Flath (Tor. '00) has removed from Chelmsford to Drayton, Ont., where he succeeds Dr. Lucy in practice.

We are pleased to announce that Dr. Harley Smith, of Toronto, has nearly recovered from his recent serious illness. He returned to his home April 18th, after recuperating in Atlantic City.

Dr. Roswell Park, of Buffalo, N.Y., sailed for Europe March 24th, and will attend the German Surgical Congress at Berlin, April 4-9.

During the Easter holidays Doctors O'Rielly, Wright, Wishart, McConnell and Fenton, of Toronto, visited "The Welland," St. Catharines.

Dr. J. Orlando Orr returned to Toronto from Chicago March 29th, after making arrangements for a number of Midway attractions for the Toronto Exhibition.

Dr. Chas. O'Reily, of Toronto, has recovered from an attack of septicaemia. There was slight injury to the ankle with lymphangitis extending to the groin.

Drs. Hutchison and Armstrong, of Montreal; Dr. Ingersoll Olmstead, of Hamilton; Dr. Anglin, of Kingston; and Dr. MacLaren, of St. John, N.B., sailed from Boston on the *Romanic* for Genoa, April 9th.

Dr. J. E. Lehmann (Tor. '93) after spending three years in Berlin and Vienna, and later after holding the position of Senior Assistant Visiting Surgeon on the staff of the German Hospital, of London, England, for several years, has resigned the latter position, and is now practising surgery at Winnipeg, Man.

We are pleased to be able to announce that Dr. J. T. Fotheringham, of Toronto, is now practically well. He sailed from New York April 21st, for Genoa. After "doing" a portion of Italy he will go north to Switzerland, and thence to London. He will probably return to Canada in the latter part of June.

Dr. Brefney O'Reily, of Toronto, has passed the conjoined examinations of the Royal College of Surgeons, England, and the Royal College of Physicians, London. Dr. O'Reily was born in Canada, educated in Canada, graduated in Canada, and is now entitled to practise medicine in any part of the British domains excepting Canada. He will return to Toronto about the end of May.

The medical profession of the County of Elgin entertained the Honorable J. H. Wilson, M.D., of St. Thomas, at a banquet, April 9th. Dr. Wilson's brother physicians adopted this method of showing their appreciation of his appointment as a Dominion Senator. Dr. Cascadden, of Dutton, occupied the chair, and proposed the health of the guest of the evening. Among other speakers who spoke kindly of the new Senator were Drs. Kains, Luton, Guest, Sinclair and Marlatt.

We are not quite sure whether we made a mistake in our last issue as to the amount of money which Mr. Jno. D. Rockefeller is likely to give to St. John's Hospital, Baltimore. It has been recently announced that he has already given \$500,000. Whether this is simply one instalment or the whole amount of his present, it should help materially to cover losses suffered by the recent fire.

Mr. W. M. Grant, the representative of Messrs. Parke, Davis & Co. in Toronto for some years, has been promoted to the position of manager of the Canadian Laboratories, at Walkerville, Ont. Mr. Grant is a Canadian, son of Rev. R. M. Grant, D.D., of Orillia, Ont., and has two well-known brothers, Geo. D. Grant, M.P., of North Ontario, and R. A. Grant, a barrister, of Toronto. The promotion of Mr. Grant will be highly appreciated by the profession of the Province.

Obituary.

WM. P. BUCKLY, M.D.

Dr. Buckley, of Prescott, Ont., died in the Ogdensburg Hospital, April 2nd, after undergoing a surgical operation. He graduated from McGill in 1870, and was well-known as a skilful practitioner in Eastern Ontario. He was a member of the Board of Examiners of the College of Physicians and Surgeons of Ontario in 1881-1882.

FRANCIS CLUNIE SIBBALD, M.D.

Dr. Sibbald died at his late residence, "The Briars," Sutton, Ont., April 7th, aged 80. He had not been in active practice for many years.

FRED. BRITTON, D.D.S.

Dr. Fred. Britton, of Brantford, Ont., died at the residence of his brother, Dr. Wm. Britton, of Toronto, April 4th, aged 30, after undergoing an operation for appendicitis. He studied medicine for a time in the Faculty of the University of Toronto, but later engaged in the study of dentistry, and after graduating practised for a time at Brantford.

JOHN ADAMS CARROL, M.D.

John Adams Carrol, M.D., died at his residence in St. Catharines on the 25th of March, 1904, at the age of 58. Dr. Carrol was the son of the late Rev. John Carrol, a pioneer both of the Methodist Church and of Toronto. He graduated from Victoria College in 1869, and practised for some years in Norwich. Afterwards his office was for a long time on the Kingston Road, a short distance east of the first toll-gate, or, according to the later nomenclature, on the south side of Queen St., a short distance east of Broadview Ave. About twenty years ago he removed to St. Catharines, relinquishing active practice on account of failing health and a desire to make the best of what health was left him in a quiet and unostentatious way, husbanding his resources and devoting himself to his books, to field researches in the flora of the Niagara Peninsula, and to general literature. He was a great book collector, and the results, donated chiefly to the Public Library of St. Catharines, will be a valuable acquisition to it.

Dr. Carrol was connected on his mother's side with the historic Adams family of New England, through whose old haunts he delighted to wander with his camera.

His name was a household word in many of the homes of old Don Mount, or Riverside, now a part of Ward 1, and many of the middle-aged and older practitioners of Toronto have a pleasant remembrance of him as an upright, straightforward colleague, and a most entertaining companion, one who could take the ordinary incidents of travel and adventure, and by graphic word-painting make a most interesting story.

Correspondence.

THE MEDICAL EXPERT

To the Editor of the CANADIAN PRACTITIONER AND REVIEW:

DEAR SIR,—Of the three great profession, Medicine, Theology and Law, Medicine is the only one making progress. Such a change has taken place in medical knowledge that an opinion held by the ablest physician thirty years ago, on say, the causation of phthisis, would at the present time be flatly contradicted by a freshman medical student. But it is the proud boast of Theology that the changing centuries find it still the same. Law, too, dates from a remote past, and our system of jurisprudence is founded largely upon tradition, so that our courts to-day are bound by decisions of jurists who lived at the time of Edward I.

In every commonwealth, the administration of justice is most important, and every physician, as a good citizen, is interested in seeing that the scales balance fairly. But when the doctor enters the courts of law, as a medical expert, he does not appear in a very favorable light, and occupies a lower position in the public eye than his skill and his learning warrant. His merits are more readily seen in the midst of a pestilence, when the court has been adjourned *sine die*, and lawyers and judge have fled, and can no longer bother him with hypothetical questions. Expert medical testimony is so contradictory and hence so valueless, that eminent legislators have seriously thought of excluding it altogether. Not long ago, after listening to a doctor's evidence, the opposing counsel asked: "Is it not true, that if I have money enough to offer for the loss of time, I can go out and get ten physicians of good repute to contradict every word you have said?" And the witness had reluctantly to admit that such was the case, although the opinion he had expressed was scientifically accurate.

There are many reasons given for the rude gibes which are cast from the bench at the medical profession as they appear in what may be called their public capacity of witness. In the first place, the term "expert" has never been legally defined, and as the law now stands, any one who can write M.D. after his name may testify as an expert. This places the fledgling medico on the same footing as the man of distinguished attainments, so far as the right to give evidence is concerned. It is the door, too, through which enters the impudent ignoramus, the pseudo-expert, who brings his profes-

sion into disrepute by making assertions which would expel him from any medical society in the kingdom.

It is a matter of great regret, also, that doctors array themselves on each side, and engage in the contest like the respective counsel, with this difference, that the lawyer enters the arena openly as a hireling, to accelerate or defeat justice, as the case may be; while the physician is under oath, supposed to deal with truth only, but plays the double rôle of witness and advocate. In the wordy struggle which follows, each expert seems more anxious to destroy the testimony of those retained by the other side than to elucidate the particular question at issue.

Another cause for this unsatisfactory state of affairs is the method of obtaining testimony, after the witness is in the box. Quite often the lawyer frames a hypothetical question which suppresses the facts he does not desire to have emphasized, and brings into prominence others which he thinks are favorable to his client. Although the expert replies correctly to this, his answer is misleading when applied to the case in hand, for obvious reasons. At other times the cross-examining counsel demands a categorical answer to a question which cannot fairly be answered in that way.

These are a few of the defects in our present system, and until they are remedied I am afraid the medical profession must be content to occupy the undignified position in the eyes of the legal fraternity which it now holds.

MEDICO.

MUNICIPAL SANITARIUM—TORONTO NEEDS ONE.

To the Editor of the CANADIAN PRACTITIONER AND REVIEW.

Dear Sir,—I have been frequently asked this question: Is there need of a municipal sanitarium exclusively for our citizens suffering from consumption? Unhesitatingly I answer, Yes!

The sanitarium at Muskoka is only for cases in the early stages of the disease, and is open to patients from all parts of the Dominion, and therefore has only limited room for Toronto, and, secondly, it is too far away to attract our consumptives in any considerable numbers, and thus inadequate to meet the needs of this city.

The so-called Toronto Free Hospital for Consumptives in the advanced stages of the disease (near Weston), and open to all Canadians, is no doubt an attractive card for securing subscriptions from all parts of the Dominion.

In this city there are continuously at least 600 persons in the advanced stages of the disease, in this province about 5000, and in the Dominion not less than 15,000.

Now, it is reasonable to believe that from the extensive advertising that is being done, at least 5 per cent. of these 15,000 may direct their faces towards this city; and that upon their arrival at said hospital will find the fifty to one hundred beds all occupied, and realize that they are within a ten-cent car fare of the great city whose name had been used to attract them.

Thus year after year consumptives from all parts of the Dominion will be dumped into this city and become an intolerable nuisance, instead of being cared for in a sanitarium in their own county municipality.

In 1897 a meeting was held at Calgary, Alberta, to take steps to inform the citizens of the Dominion that the Territory of Alberta was a favored place for consumptives. The news spread and many consumptives turned their faces towards Alberta.

Dr. Lafferty, of Calgary, who had favored this movement, in addressing the Canadian Medical Association at Winnipeg in 1901, warned the medical men of the east not to send their consumptives to Alberta, as there was no sanitarium accommodation, that the hospitals, hotels and boarding-houses would not take them in, and that their condition was deplorable.

This, together with the experience of Colorado, California and other states, should be warning enough to our citizens.

The burning question in Toronto to-day is: Shall our citizens contribute \$25,000 so as to take advantage of the \$50,000 voted by the ratepayers, and of the government aid of \$4,000 for land and buildings, and \$1.50 a week for each patient, and establish a municipal sanitarium under the act, exclusively for our citizens suffering from consumption, or shall this city become the dumping place of the whole Dominion for advanced cases of this disease?

E. J. BARRICK.

Book Reviews.

The Public and the Doctor. By a Regular Physician. Dallas, Texas: Dr. B. E. Hadra.

This little book contains many sensible hints to the patient and the public.

Fischer—Infant-Feeding in its Relation to Health and Disease. A Modern Book on all Methods of Feeding. For Students, Practitioners, and Nurses. By LOUIS FISCHER, M.D., Visiting Physician to the Willard Parker and Riverside Hospitals, of New York City; Attending Physician to the Children's Service of the New York Poliklinik; Former Instructor in Diseases of Children at the New York Post-Graduate Medical School and Hospital; Fellow of the New York Academy of Medicine, etc. Third edition, thoroughly revised and largely re-written. Containing 54 illustrations, with 24 charts and tables, mostly original. 357 pages, 5½ x 8¾ inches. Neatly bound in extra cloth. Price, \$1.50, net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, Pa.

Dr. Fischer has the advantage of speaking from experience, and his book makes interesting reading. It has, in this edition, been largely re-written, with the idea of making it more useful to the general practitioner, who may not have access to milk laboratories. The beauty of the whole work is that it is practical.

The American Year-Book of Medicine and Surgery for 1904. A Yearly Digest of Scientific Progress and Authoritative Opinion in all branches of Medicine and Surgery, drawn from journals, monographs and text-books of the leading American and foreign authors and investigators. Arranged, with critical editorial comments, by eminent American specialists, under the editorial charge of GEORGE M. GOULD, A.M., M.D. In two volumes. Volume I., including *General Medicine*. Octavo, 673 pages, fully illustrated; Volume II., *General Surgery*. Octavo, 680 pages, fully illustrated. Philadelphia, New York, London; W. B. Saunders & Co., 1904. Canadian Agents: J. A. Carveth & Co., Limited, 413 Parliament Street, Toronto, Ont. Per volume: Cloth, \$3.00 net; Half Morocco, \$3.75 net.

The American Year-Book of Medicine and Surgery continues to maintain its high place among works of its class. Indeed, the issue of 1904, now before us, if anything, is even better than the excellent issues of previous years. Such a distinguished corps of collaborators, which the editor, Dr. George M. Gould, has enlisted as his assistants, is sufficient guarantee that the essential points of progress are brought out, and the collaborators' notes and comments are excellent. In the illustrative feature the 1904 issue fully maintains its reputation, there being fourteen full-page insert plates, beside a number of excellent text-cuts. Saunders' Year Book for 1904 is the best work of its kind on the market.

Preventive Medicine. Two prize essays, "The General Principles of Preventive Medicine," by W. WAYNE BARCOCK, M.D., and "The Medical Inspection of Schools; a Problem in Preventive Medicine." By LEWIS S. SOMERS, M.D. Published for gratuitous distribution to the medical profession by The Maltine Company, of Brooklyn, N.Y.

Four Epochs of a Woman's Life. By ANNA M. GALBRAITH, M.D., Philadelphia, New York and London: W. B. Saunders & Co.; Toronto: J. A. Carveth & Co.

Dr. Galbraith writes for the laity on Maidenhood, Marriage, Maternity, and the Menopause, and has discharged her difficult task well. This is the 2nd edition, revised and enlarged, and we are glad that the author has included, among other additions, a reference to the early signs of uterine carcinoma.

Biographic Clinics, Vol. II. The origin of the ill-health of George Eliot, Geo. Henry Lewes, Wagner, Parkman, Jane Welch Carlyle, Spencer, Whittier, Margaret Fuller, Ossoli and Nietzsche, by GEO. M. GOULD, M.D., editor of *American Medicine*, author of "An Illustrated Dictionary of Medicine," "Borderland Studies," etc. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1904.

The first volume of this work was discussed in this and other medical journals so fully that there is little left to be said in way of review of the various studies taken up in Volume II. Dr. Gould brings forward a large array of facts to prove his contention that near eye-work is the basis of the ill-health of a great many eminent people, and of many more occupying humbler positions in life. Although his experience and his opinion are at variance with those of a great many physicians who have studied the subject carefully, his contributions have awakened the profession to the possibilities of eye-strain as a remote cause for many an obscure disease. It seems to be the general opinion among the medical profession though, that Dr. Gould has not proved his point.

F.A.C.

Progressive Medicine, Vol. VI., No. 1. A quarterly digest of advances, discoveries and improvements in the medical and surgical sciences, edited by HOBART AMORY HARE, M.D., Jefferson Medical College, Philadelphia, assisted by H. R. M. Landis, M.D. March 1st, 1904. Lea Brothers & Company, Philadelphia and New York. Six dollars per annum.

This welcome quarterly has established such an enviable reputation for itself during the last six years, that it needs no word of praise. The departments into which the work is divided are in good hands, and the reader feels, as he takes up any special subject for study, that he is getting all that is worth knowing about it in a clear, concise and yet readable form. The first volume of 1904 is equal to anything which has preceded it, some of the articles being of exceptional merit. One of these we have abstracted for the benefit of our readers.

F.A.C.

Diseases of the Eye. By L. WEBSTER FOX, A.M., M.D., Professor of Ophthalmology in the Medico-Chirurgical College of Philadelphia, Pa., Ophthalmic Surgeon in the Medico-Chirurgical Hospital. With five colored plates and 296 illustrations in the text. New York and London: D. Appleton & Co., 1904.

This is a new applicant for public favor, and it will prove a formidable competitor for some of the older works on the same subject. The author states as his object, "To provide a digested summary of the known facts for use of students who in after life become practitioners of medicine."

The book therefore is concise, yet covers the ground well. The first chapter is devoted to the development and anatomy of the eye. Having thus prepared the way the author takes up diseases of the eyelids; then of the lachrymal apparatus; the conjunctiva; cornea, sclera; iris and ciliary body; choroid, retina; optic nerve; lens; vitreous; and lastly, of the orbit, devoting a chapter to each. It will be noticed that a regular plan is observed, passing from the outer to the deeper parts. The author follows the same plan in dealing with the diseases of any special part.

There are also chapters upon glaucoma; sympathetic ophthalmia; and the use of the Röntgen rays in locating foreign bodies in the eye. Two specially valuable chapters are, one on the relation of ocular affections to general diseases, and one on the pupil in health and disease. Refraction he speaks of after having considered the diseases.

The illustrations are remarkably good, having evidently been prepared to be helpful to the practitioner rather than for theoretical purposes.

The book concludes with a formulary and a glossary of terms used in ophthalmology, both of which are most valuable especially to the general practitioner.

The work is thoroughly up-to-date, and will take rank with the best of the medium-sized works on the diseases of the eye.

Bacteriology of Every-Day Practice. By J. ODERY SYMES, M.D. (State Med.), London, D.P.H., etc., Assistant Physician and Bacteriologist Bristol General Hospital. Price, 75 cents. Canadian agents: Carveth & Co., Toronto.

The value of bacteriological examination in the diagnosis and treatment of diseases is now generally recognized by medical practitioners. The author in this little book has three points in view: (1) To point out in what cases bacteriological examination may help in clinical diagnosis; (2) to describe methods of securing and identifying microscopical specimens; (3) to give directions for taking cultures and for preserving tissues to be sent to the laboratory. It is altogether a desirable and practical little book, well suited for both students and physicians.

Simon's Clinical Diagnosis. A Manual of Diagnosis by Microscopic and Chemical Methods. For Students and Practitioners. By CHARLES E. SIMON, M.D. Late Assistant Resident Physician at Johns Hopkins Hospital, Baltimore. New (fifth) edition, thoroughly revised and much enlarged. Octavo, 695 pages, 150 engravings, 22 colored plates. Cloth, \$4.00 net. Lea Brothers & Co., Publishers, Philadelphia and New York. 1904.

Exact methods of diagnosis are of comparatively recent development, and, as they underlie all successful treatment, they should be understood and practised by every physician. These methods are not complicated nor abstruse, and the object of this volume—an object which has been most satisfactorily attained—has always been to set forth and explain these methods and their practical application so simply that they may be readily grasped by every student and practitioner. Four large editions have already been demanded, the last of which was completely exhausted in less than two years.

Besides a careful revision, this edition embodies much new matter which has appeared in the literature of the past two years. The chapter on the blood has been almost entirely rewritten, and has been enlarged by sixty pages. Special pains have been taken with the chapter on technique. A section dealing with the nature of anilin dyes and the principles of staining has been introduced, which it is hoped will render this portion of the book more interesting to the clinical laboratory worker, and will serve as a guide to further investigation. For convenience of reference, the subject of leucocytosis has been rearranged in such manner that hyperleucocytosis and hypoleucocytosis are separately considered in connection with the different varieties of leucocytes. A new section deals with the kryoscopic examination of the blood. The bacteriology and parasitology of the blood have been enlarged, with sections on paratyphoid fever, gonococcus septicæmia, bubonic plague, trypanosomiasis, and spotted fever. Material changes and additions have furthermore been made in the chapters on the feces, the sputum, the urine, and on transudates and exudates, and minor alterations occur throughout the book. Illustrations, including colored plates as well as engravings, have been added wherever they appeared necessary to elucidate the text, and this new edition will without doubt greatly increase the already wide usage which the volume enjoys.

Messrs. E. B. Treat & Company have decided to merge the two following journals:—*The International Medical Magazine* and the *Archives of Pediatrics*. The publishers are discontinuing the Magazine and hope that its subscribers will continue their interest by reading *The Archives of Pediatrics*.

Miscellaneous.

Brief Observations on Some Conditions in Women that are of Much Concern to the Practitioner.—J. RIDGLY SIMMS, A.M., M.D., Racine, Wisconsin.

The conditions of which I wish to speak are dysmenorrhea, and the state following miscarriage or abortion, in which there are retained portions of the placenta and membranes that require removal or expulsion.

For lack of space, I shall devote myself, in the present paper, chiefly to dysmenorrhea, and will dismiss the condition following abortion with a few remarks, which may as well precede the other part of my article. I reserve for a future communication the detailed discussion of this important and interesting clinical condition.

The effects of retained placental or fetal tissue in a partially successful miscarriage or abortion consist in hemorrhages, purulent discharge, enlargement of the uterus, subinvolution, metritis, endometritis and sepsis. The indications in these cases are, therefore, the thorough emptying of the uterus and the rendering of the womb-cavity aseptic.

In ordinary cases this must be done by surgical interference, including curetting and the removal of all decomposing and diseased tissue, followed by the application of antiseptics to the endometrium. There is a class of cases, however, in which, for one reason or another, curettage is refused by the patient, and in which it is incumbent upon the physician to give what relief he can by medical means. In such cases I have prescribed Ergoapiol (Smith), a combination of the active principles of ergot (ergotine) parsley (apiol) and certain other emmenagogues and uterine tonics. In one case of this kind which came under my observation some months ago, I used Ergoapiol (Smith) with such marked success, that I learned since then to rely upon this preparation in removing the retained fragments from the uterus, emptying the organ and reducing it to its normal size and functions. The remedy in question has proved so trustworthy in my hands in these cases, that when it disappears, which it rarely does, I look about to ascertain wherein I myself have erred.

A discussion of the causes of dysmenorrhea would lead us too far in the present brief clinical paper, and it will suffice if I assume that the reader is acquainted sufficiently with this part of the subject to follow me in the remainder of the article. The clinical diagnosis of dysmenorrhea is in itself easy enough, while the diagnosis of the cause is not always so simple. In the cases presented here I paid especial attention to the causation of the menstrual pain, as I believe that in this manner I

was better able to outline the indications for treatment. It goes without saying that dysmenorrhea from mechanical obstruction is not amenable to medical treatment. Fortunately, however, it has been in my experience at least, not frequent, as dysmenorrhea depending upon congestion. The specially disagreeable and intractable form of dysmenorrhea which is accompanied by a fetid discharge as a result of the decomposition of the retained menstrual blood, also comes under discussion here, as the use of douches with antiseptics and deodorants cannot be hoped to affect it permanently, while the employment of more radical medicinal means does bring about the desired effect in this condition.

In congestive dysmenorrhea, and in that form which is accompanied by fetid discharge, the indications are to diminish congestion, by promoting the contractions of the uterus and relieving it of the accumulated blood, to stimulate glandular activity in the mucosa, to restore the tone of the uterus and the nutrition of its tissues to normal, and to relieve spasm and pain.

The following cases illustrate the effects which I obtained with the use of Ergoapoi (Smith) in the treatment of dysmenorrhea:

Some months ago I was consulted by a young woman who had suffered from scanty, fetid menstruation, accompanied by a great deal of pain, since the birth of her first child seven years previously. Her labor had been followed by a tear of the perineum, which had been left unrepaired, and also a laceration of the cervix uteri. This patient consulted a specialist, but his treatment did not give her relief. Examination revealed the presence of the uterine and perineal lacerations already mentioned, and disclosed a chronic endometritis that had given rise to a fetid discharge and to pain during each menstrual period. I repaired the tears, curetted the uterus, and hoped in this manner to obtain permanent relief of the patient's symptoms. After she had recovered from the operations, she declared that she was feeling better than she had been for years. But very soon the fetid discharge and the pain returned at each menstrual period, and evidently something else had to be done if I wanted to save my reputation. I then tried local applications, alteratives, uterine tonics, etc., all without avail, until finally Ergoapoi (Smith) was given. The result was immediate relief and a gradual and permanent improvement in the menstrual flow until it was free from pain and devoid of any disagreeable odor.

This patient was evidently suffering from congestive dysmenorrhea, which was intensified by the presence of lacerations of the cervix and the perineum which had existed since partu-