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Original Articles

MEDICAL FOLK LORE IN INDIA.*

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In India the practice of medicine is in the hands of many classes. We have, in the first place, the European physicians and their numerous native pupils who practise what is there called "English medicine." But their practice is of comparatively recent introduction and has taken very little hold on the masses, the united mind of which is eminently conservative—what is good enough for a Hindoo's father is good enough for his son, is the rule there, not only in medicine, but in agriculture, dress and most other directions.

A much more numerous class is that of the Aryan physicians—men who, highly educated in the wisdom of the ancients, practise medicine much in the same way as did their predecessors of hundreds of years ago. They quote their authorities, Charaka, Sashrata, etc., as European physicians some centuries since would swear by Hippocrates. While quite ignorant of pathology and most of what we consider constitutes the science of medicine, they are most deeply versed in what we might term *physicians'* lore (as distinguished from the lore of the villagers), and especially in the department of dietetics, have brought their art to great empirical excellence.

Next we have the priests, bone setters, many charlatans of various kinds, and lastly, a vast horde of people who combine more or less of medical practice with their other occupations. It has been said that a man is either a fool or a physician at forty, and the remark might in India be applied to women, and every village has at least one wise woman who does a large amount of the practice which turns up. She is ignorant of all the wise writings of the ancient authors, most likely cannot even write her own name, but

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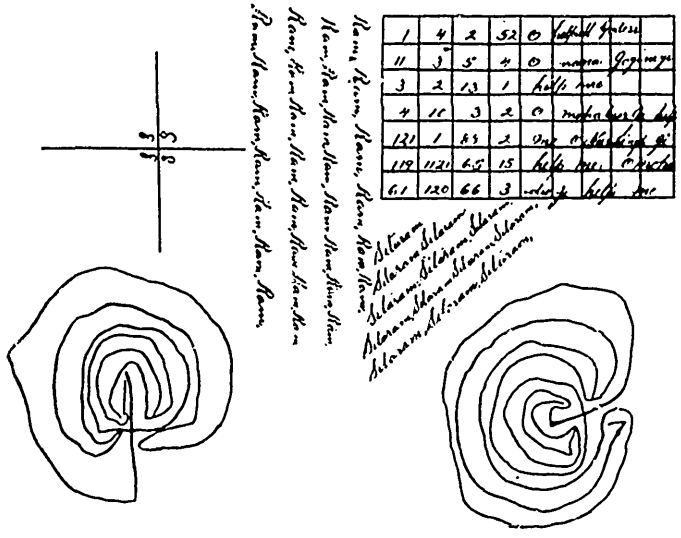
she is wealthy in superstitions concerning disease, and is the possessor of recipes for certain charms and potions handed down by her predecessors, and she practises according to the tenets of the local folk lore. Her practice grows with her increasing years, and if time marks her with even more wrinkles than usual and bends her back until she cannot straighten it, then her reputation increases greatly and it seems that the older and uglier these primitive woman doctors are the more they are thought of.

Has Baboo Hemneryhan, the respected clerk of the local law court, the jaundice or do his aging joints pain him when he rises in the cold, early mornings in December, it will never occur to him to consult with the English Doctor Sahib, or go to the Government

hospital for treatment. "No; he is not ill enough for that," say his friends, and so the wise woman of the village is sent for and she with much muttering and mysticism will compound a potion or will make up some charm for the special trouble complained of. If the patient improves, then she gets the credit (and may deserve it), if he does not do so, then she will explain that the spirit which is causing the trouble is still angry, and a priest probably is called in. He does not believe so much in drugs, although he occasionally uses them as spirit scarers. His powers lie chiefly in incantations and charms, and for a small pecuniary consideration he will exercise them, and either by tempting or driving the spirit of the disease out, will cure his patient if possible.

But perhaps, in spite of all this treatment, the old man gets worse. He perhaps grows yellower day by day; the rotund figure which in the East lends so much dignity to the owner, dwindles,

and his ribs show through his skin. His European superiors at Court remark upon his altered appearance and persuade him at last to see the Doctor Sahib, who probably recognizes the case as one of cancer, and as such, hopeless. It is *kismet*, say the dying man's friends; the spirits will not leave him, say the priests, and when he is dead they will probably add that at least as long as he was attended by them he lived, but that when he went to the English doctor the spirits were angry, and that hence he died. Under such a process, it will be seen that the English doctor is likely to have a terrible death-rate amongst his native patients. All the cases that can recover under the influence of suggestion, faith, time, and that friend of the doctor, the *vis naturae medicatrix*,



never reach him at all, but go back to health and strength as witnesses of the power of the priests and others; and the ones which reach him are either hopeless, as in the example given, or have lost much time and have hence a less chance of recovery.

The native of India is eminently superstitious and sees omens for good or evil in everything. To his mind every nook and cranny, every tree and building is peopled with spirits. If a whirlwind carries an eddy of dust across the road, he points to it as a visible spirit. But if in the daytime he is nervous and suspicious, at night he is ten times more so, and it is a brave man who will by himself then cross a bridge, for under every such dwells a ghost. The priests, who are in my opinion usually great frauds, of course foster the idea of spirits, as the more offerings the people make to such the richer does the priest become.

Further, the idea of the supernatural causation of disease is

almost universal in the East. At one time it is a god or goddess (usually the latter) who introduces the disease, whatever it may be, into the body, while at another the goddess or spirit (they are one and the same) actually *is* the disease and herself dwells in the person affected.

Where a belief of this kind exists, it is quite certain that eye-witness evidence will be forthcoming when called for. Recently when the plague was raging so terribly in Bombay, both Hindoos and Mahometans believed it to be due to a hostile spirit—the Plague goddess, and as one might have anticipated, a witness soon appeared in the form of an old Mahometan woman whose eyes had been cleared by a visit to the sacred city of Mecca. This old lady swore that she saw the plague spirit in the form of a gaunt female, with bloody fangs and fleshless sinewy arms, sheeted in white, stalking through the streets of the city. Similarly, during an outbreak of small-pox in Calcutta, in February, 1897, it was believed that the goddess Sitala (the deity presiding over small-pox) was seen at dead of night, this time by a native policeman, stalking along one of the public thoroughfares. In consequence, the people flocked to the shrine of this goddess and offered up prayers and gifts. The epidemic just then began to decline (owing doubtless to the excellent work of the health officer of the city), and the people, of course, believed that the goddess was appeased. The policeman, by the way, said that he went boldly up to her and was about to lay hands on her when he was prevented by an unseen agency—probably the goddess of *Fear!* The irate spirit pronounced sentence of death upon him at the same hour on the following night and then vanished into the air. Sure enough, he expired on the following night after telling his story. His death was probably due to pure fright and showed how truely he believed the story which he told.

The priests have the power of persuading the spirits of disease to strike erring human beings sometimes, and a good example of this belief existed in the town in which we lived in India. Near an old bungalow, used occasionally by Government officials, was an unnamed grave, which by the weather-beaten appearance of its arched brick covering, had evidently been there for many years. The story was that the man buried there was a European engineer who lived in the district about fifty years ago. His last piece of work was a bridge over a large river-bed nearby. A priest who lived near the bridge which was being built did not approve of the work, and after threatening the engineer several times he gave notice that if the work did not stop on a given day he would publicly curse the defiant European, and would call on the spirits to strike him dead. The day arrived and from early dawn the people for miles around kept gathering on the banks of the water-way to watch the performance. The engineer was there, angry

and put out, and determined more than ever to make his unwilling workmen do his bidding. When the old priest saw that his warnings were neglected he stood up on one bank and started to curse, as promised. Hour by hour went by, the sun grew hotter and hotter as the blazing May day went on. The engineer worked and fumed harder than ever, and at last towards afternoon, probably as a result of the heat and excitement, fell down in a fit on the unfinished bridge and died, so that the priest won the day. The bridge, although of great importance, being on a great military road between Patna and the north-west was never completed, and when you cross the stream, as I have done hundreds of times, you drive through the river-bed in the dry weather, and in the rains you go in a boat.. The unfinished piers of the bridge stand there still, gradually crumbling away.

The tale has a sequel—the natives believe that the spirit of the (shall we call him) murdered engineer wanders nightly near his grave, and that he cries out at intervals, so that they will not at night occupy a row of huts near by. One night I was called out of bed by a terrified looking native, who begged me to go at once to see a young civilian (just out from England) who was stationed in the bungalow, and who was dying. I hurried down and found the young man just recovering and very hysterical. He knew the story of the place, and I believe had become hysterical from fright or nervousness at some sound heard. But the natives for all time to come will tell how the spirit of the cursed engineer seized upon the young sahib in the middle of the night. They probably also give me credit of having very quickly exorcised him by saying a few *charms* to the patient.

The Mussulmans of Herat believe that the spirit of cholera stalks through the land in advance of the actual disease. Here we have evidence that their keen observation had grasped the fact that a something, call it a spirit or call it a microbe, preceded the actual invasion by the disease. They had, indeed, discovered that there was an incubation period in cholera.

When cholera is raging in a village a dreadful hubbub is kept up by the inhabitants. This is to scare away the goddess of the disease from the village. But in the surrounding villages the people are equally alive to their danger, and by lighting fires (which was also done, by the way, in London, in 1665), and if possible, making more noise than their neighbors, they try to dissuade the spirit from coming near them. Naturally if the villagers of one hamlet are doing their best to frighten the spirit of the disease from out of their domain, and the inhabitants of the next village are doing their best to prevent the same from crossing the boundary, ill-feeling is apt to arise between the villages, and such has often been the cause of serious feuds between the parties concerned.

It reminds one of a very common scene in the rural districts of India. A Brahminie bull is an animal in which dwells the the spirit of a dead Brahmin priest. He is branded all over with signs and symbols of his high office. He belongs to no one and is free to wander and browse anywhere, at least in theory; but when a Hindoo comes out on an early morning and the dawning light shows him a Brahminie bull rapidly gorging his precious little patch of seed rice or making havoc amongst the Indian corn which has to last him until the rains, then in spite of the sacredness of his bovine guest, he endeavors by the aid of clods of earth, or even a stick, to persuade the animal to move on. The "move on" means that the still only half-breakfasted bull starts to graze on the next man's patch of crops, and the owner of this can equally ill-afford to lose his property, and so tries to drive the animal back again. The beast must go somewhere, and thus after trying to go north, and being headed off and turning south, and again meeting with a rebuff, he turns westward and may steal a meal in that direction. But the blood of the two villagers is up by this time, and long after the bone (or rather bull) of contention has passed, they will turn their batteries of clods and bad language on each other. Now when the villagers start to fight verbally, the women feel that it is their quarrel, and thus a row which started at daylight may last until the heat of the sun drives the combatants apart. Generally, after the men have got their female relatives well started, they leave the matter in their hands and themselves loaf off to work or bathe.

I have already mentioned that when natives wish to scare away spirits they make use of noises, and hence the beating of drums and blowing of conch shells make night hideous after funerals, marriages, and other domestic events, for on such occasions spirits are supposed to be specially prone to be present and to give trouble. The feeling is wide-spread in India that the decline of the power of the spirits during the present century has been due, not as we would explain it: to the spread of education among the masses, but to the sound of the British drum.

With such a fallacious groundwork as regards the etiology of disease to go upon, the people of India have nevertheless had handed down to them many very wise hygienic rules of conduct. Thus they believe that when small-pox is raging it angers the goddess of Disease for the friends and neighbors of the sick man to go near him, and it is for the same reason inexpedient that they should travel. Their best conduct is to stay quietly in their villages, avoiding the dwelling of the sick man, leaving his treatment to those specially appointed for the purpose. Now evidently the united observation of many people through hundreds of years had noted that when people went near such a patient they were apt to get the disease themselves, or when (having been near him) they

travelled elsewhere they were apt to leave the disease in their wake. Their theory to account for these facts is that such acts angered the goddess, who in consequence spread the disease; ours would be that the disease is due to a contagium. Both of us, however, have reached the same important conclusion, *i.e.*, that quarantine is necessary.

Unfortunately, it is only some customs which can be thus commended and explained. As an example of the opposite, Sir J. M. Campbell mentions that in the Konkan district, "a ghost is supposed both to carry and to cure small-pox. Every year on the full moon of Vnisakh (April or May), a big festival is held in honor of this goddess. An image of her is raised and persons, generally women, make strange noises. In some cases a boy or girl suffering from small-pox is made to lie across the threshold of the temple and the people are allowed to pass over their bodies." It is hard to see how such a custom could arise, and it can certainly not be commended on any grounds.

The spirits of disease fear many things besides sound and fire. Thus iron, especially in the form of weapons, has a very terrorising effect upon them. I remember on one occasion, when called to see in consultation with a doctor baboo a high caste Brahmin woman, as I entered the sick room I noticed several old rusty weapons lying across the threshold. I went to remove them, but the anxious husband, who was a highly educated native in Government employ, explained rather sheepishly, that the women of the house had put them there and wished them to remain in order to scare away the spirits of disease. I found, however, that the spirits had already been busy, for the woman was dying. Iron in any form is useful in the same way, and amongst the Basik Mahometans "when a woman dies in child-birth, as the body leaves the house, a horse-shoe is driven into the threshold to prevent the spirit coming back again."

Very many other materials of the most varied description are believed to be deterrent, more or less, to spirits. Salt, honey, precious metals, water, human saliva, and hundreds of other things are of this class. Colors are decidedly effectual, and thus brides are in India dressed in red. At weddings, as at all other domestic functions, the spirits are supposed to be specially active and likely to do harm, hence also the wedding bells, etc., etc.

Many disease gods are the spirits of people who actually existed, *e.g.*, in Hardwan (north of the Jumna) the god of Cholera was once the second son of the miscreant Rajah of Orchha, who assassinated the accomplished Abdul Fazl, the litterateur of the court of Akbar, in 1627.

The scapegoat idea is a very common one in the East. As exampling it I may describe a ceremony which used yearly to occur at the seat of a native prince near our home in India. Every

autumn near the day of the full moon, called the Doosarah, thousands of people would collect there to be entertained by His Highness. All the Europeans who were invited were put up at the palace guest-house. The party would last three days and we saw very little of our host, but were royally entertained. On the actual night of the full moon the curious custom referred to used to take place. The maharajah, dressed in gorgeous clothing and surrounded by his numerous attendants and court hangers-on, took part in an elephant procession. He went first in a gilded howdah borne by a magnificent tusker, followed by some thirty or forty other elephants carrying on their backs gorgeously clad natives. His Highness was pleased if any of the English took part in the procession. As the sun was sinking, the long array started and wound its way in slow pomp through the wide and narrow crooked streets of the town, the numerous elephant bells clink-clanking like great cow-bells. The route was crowded by a motley throng of natives, all in bright holiday attire, and these followed us out the two or three miles into the country. As the sun set, the procession stopped at a given signal. The maharajah then rose to his feet, and amidst the most absolute silence, took a blue-jay from a wicker cage, and muttering some words of prayer, threw it into the air. Away it flew leisurely across the bare rice fields, every eye following its owl-like flight with breathless interest. For in the minds of these thousands of watchers, the bird carried away with it the sins, diseases and ill-luck of the whole community ruled over by the maharajah. From its flight further they would make deductions as to luck for the coming year. When the bird had safely disappeared the crowd would raise a great shout, fire off guns and fireworks, and otherwise give vent to their joyful feelings. The procession then turned homewards and the evening would end by a grand display of fireworks, given by His Highness. At the last of these ceremonies (in 1895) the blue-jay, on being thrown into the air, fluttered helplessly among the crowd. This ill omen very much depressed the watchers, and it was said that the priests prophesied the illness or death of the maharajah before the next Doosarah. Sure enough their forebodings came true, as within six months His Highness was dead, and his estate was in the hands of the Court of Chancery, where it still remains awaiting the majority of his only son.

The idea of the transference of disease is very common in the East. Crooker in his "Folk Lore" relates the following case: "An indigo planter near Benares was astonished by a respectable native friend asking for the loan of a goose. On inquiry, he ascertained that his friend's son was suffering from bowel complaint and that he had been told by a native physician to get a goose, place it in the boy's bed, and that the disease would be communicated to the bird with the result of curing the patient." This remedy is known in

Italy and the general principle of the transference of disease is found in nearly every part of the world.

The wind is a spirit in many lands, *e.g.*, amongst the red Indians in this country and the bushmen in Australia. In India the word "*vayu*" means either wind or rheumatism. It is related how a religious man named Ramji, from excess of devotion or some other cause, became weak and nervous. His doctor said, "It is wind stroke. Eggs are the thing—strengthening food. Eat eggs and you will be well." His theory of the disease sounds odd, but who can gainsay his treatment, and sure enough Ramji recovered.

The Pankas believe that the goddess Devi stalks in the sunshine in the blazing days of the hot weather, and especially strikes children who are dressed in red. The result is what we call sunstroke. And yet native mothers have their new-born babes well oiled and placed out in the hottest sunshine to "harden" them. Perhaps the oil keeps off the deadly goddess Devi, for oil is a well-known specific and curer.

Thus far we have been dealing rather with the folk lore view of the causation and prevention of disease.

When diseases *have* occurred, when the spirits from anger or any other emotion have entered the human body or have placed disease there, then such must, if possible, be got rid of, and this brings me to the second part of the subject, viz., the lore concerning the treatment of existing disease.

As already mentioned, the idea of an external agency in the causation of disease is the all-prevailing one amongst the masses in India. If all diseases were produced by microbes, then this belief would fit in very well with what science has taught us to be the truth: the terms "disease spirit" and "microbe" merely becoming interchangeable words. But when one finds the same explanation applied to even such evident things as snake bite and thirst, then the absurdity of the application is evident. It is only fair to say that the Aryan physicians account for diseases on the old humoral basis and only believe those to be of supernatural origin which they cannot otherwise explain.

Speaking of snake bites, such are exceedingly common in India and some 25,000 deaths are annually reported as due to this cause alone. When a native is bitten, such a noise arises in the village that even at a distance it is quite easy to tell what has happened. The local practitioner is at once in attendance and he or she knows enough of surgery to immediately tie a tourniquet round the limb. The snake, if still visible, is carefully guarded from injury and encouraged to make safe his escape. A bond of union is believed to be established between him and his victim and if he dies so will probably the man. This belief is seen in England somewhat differently moulded. If a man is bitten by a dog, the dog is at once killed; if he goes mad afterwards the man

is likely to do so also. The bitten native, dumb with fear, is surrounded by a circle of sympathetic and curious friends, who watch every symptom develop and comment freely on the same. You will probably hear them talking about where they will bury him, etc., which can scarcely be encouraging to the patient. He grows worse. The priests mutter charms, beat tom-toms and otherwise endeavor to exorcise the spirit of the disease. Gradually the patient becomes unconscious and when he is nearly dead his friends carefully close his nostrils and mouth in the hope of keeping the breath in his failing frame, and thus prompted by the best of motives probably hasten the end they are trying to avert. Of course, people do not always die when thus bitten—perhaps the snake only grazes the skin or strikes through some clothing so that often a recovery occurs and then the priests plume themselves. After all, our results in such cases were not much better than theirs until very recently.

This exorcism of spirits is much practised by the priests, who are, so to speak, the orthodox practitioners of the art, although all try their hands at it more or less. When a priest is called to see a sick man he identifies the demon which has beset his patient. He endeavors to ascertain whether it is a local ghost or an outsider (which has attacked him on a journey). Having thus made his diagnosis, which he announces with much the same dogmatism which we physicians get the credit of doing (it would *never* do for him to appear doubtful even for a moment), then he proceeds by various means, repeating monotonous rhymes (the spirits cannot abide poetry) giving drugs or making peculiar marks upon the patient, etc., to tempt out or scare out the spirit which is troubling him. If the man recover, the priest gets the *kudos;* if he die, then he says such and such a spirit carried him off—"What can a poor man do against such?" etc. The people of India have no more recognized that many diseases will cease naturally, that the spirit will leave of its own accord, than did we a hundred years ago. Hence they think still, as we thought then, that vigorous treatment must be used or the patient must die or at least remain ill.

Sometimes, especially in Burmah, the patient is soundly thrashed by his medical attendant. Not that he has done anything wrong, poor fellow, but such a treatment may scare out the spirit. One can well imagine that in some forms of disease the patient would be only too glad to announce that the demon had left him and would loudly join in the praises of the clever practitioner who had thus speeded its departure. He might possibly evince a desire to give the priest some of his own medicine, but of course the holy man is on far too good terms with the spirits to require any such aid from the laity! One of the best ways of driving out diseases is by means of noises and bells, conch shells, tom-toms, etc.—all

much used for this purpose. Black, in his "Folk Lore," mentions that "in Alaska the Indians beat drums close to the sick man. After beating them to pieces, if the patient is no better they decide that the spirit cannot be moved, and as they do not want any sick people about they at once strangle him." A curious custom prevails in certain parts of India, which forbids that parturient women should be allowed either food or drink during their confinement. I remember one case where a poor woman was brought into the Government Hospital who had been in labor for eight days. It was in intensely hot weather and the poor creature had not even had a drop of water to drink during all that time. Various charms, either in the form of beads or other bodies, are largely used in the treatment as well as in the prevention of disease.

It is a strange thing that, notwithstanding the grotesque beliefs of the Indian people concerning the nature of disease, nevertheless they have been led by their accumulated experience (one might almost call it instinct) to the discovery of very many useful drugs and these they often use with great skill and success (of course, as spirit scarers). To take an example out of India, cinchona was known from time immemorial amongst the natives of Peru as a cure for fever and ague. They did not know that this disease was due to the malarial organism in the blood nor yet that this parasite is specially susceptible to destruction by an alkaloid of cinchona, called quinine; but they had discovered the all-important fact that the drug *cured the disease*, and since then we have only with all our advantages shown *how* it does it. The story of the first use of cinchona by Europeans is like a romance. It seems that, in 1638, the Countess del Cinchon, the wife of the Viceroy of Peru was suffering from fever. A native friend advised her to take the drug so much used by his people for this disease. She consulted her physicians about it and they opposed it strongly. It was witchcraft (here comes in the spirit-scaring idea). The good lady, in her difficulty, went to her priest about it. He solved the difficulty by blessing the bark; the Countess del Cinchon took of it and recovered, and it hence was christened cinchona.

Such a sequence of events as the following is probably the common story of how drugs are discovered and later on their actions are explained. In the past ages some wretched native whose life was made miserable by dysentery tried to refresh his lips by sucking the cool and acid fruit of the Bael tree. Shortly afterwards, to his own and his friends' surprise, his disease began to lessen. Putting two and two together he would probably argue, in the *post hoc, ergo propter hoc* manner, and would tell others who were similarly afflicted. Some of them would also improve. The priests would hear of it in time and would surely say: "The spirit of dysentery is afraid of the Bael fruit," and in future the drug would be called a

spirit scarer. As in the case of cinchona and malaria, so here the cardinal fact is that the drug tends to cure the disease and the after-added explanation of why and how it does so varies, as do most theories. Of course the *post hoc, ergo propter hoc* argument is very apt to be fallacious and many and many a time must savages have thought that they had made discoveries when Time, the true leveller, would show that they had not done so. The erroneous deduction might last for generations, buoyed up by the recommendation of some great name, but in time it will find its level.

Very many other examples might be mentioned where drugs so discovered have been found to be quite as useful as they were said to be by the wholly illiterate and superstitious tribes by whom they were discovered. Probably I am correct in saying that most of the vegetable bodies at present in our pharmacopeia so originated: opium, Indian hemp, coca, may be mentioned here. Let us look at a few vicissitudes in the history of the simple drug water H_2O.

Man in the earliest times, along with other animals, discovered that water relieved his thirst, and if he were fevered or ill he seemed to be benefited by the free imbibition of the same. Not being, like the animals, content with this simple discovery, his active mind must needs seek an explanation of *why* water thus acted. Hence arose the theory that the spirit of thirst dreaded water and this is about the position of the folk lore in India to-day on the subject. Thus Sir J. M. Campbell writes: "Water drives off the spirit of thirst; restores life to those in a swoon. On the great power of it over diseases, *i.e.*, over spirits, the claim of water, the great purifier, seems to rest. The endless bathing of the high caste Hindoo is for driving off evil spirits, not for personal cleanliness." In the English form of baptism, till 1550, the following words appear: "I command the unclean spirit to come out and depart."

It will be remembered that Dr. Sangrado's chief remedy was water. "Drink, my children," he is made to say to Gil Blas and his other pupils, "Health consists in the suppleness and humectation of the parts. Drink water in abundance; it is a universal solvent; water melts all the salts. If the flow of blood be a little sluggish, water accelerates its motion; if too rapid, water checks its impetuosity."

But the scene changes as time goes on, and it is not so many decades ago since blindly interfering—because theory over-burdened—practitioners withheld the cup from the fevered patient's parched lips, although the poor wretch, prompted by his own instincts, feebly begged for water to quench his thirst.

At the present day we join hands with our savage forefathers across the centuries of time and say, "We agree with you water

does cure thirst; water does ameliorate many symptoms of disease." And having gone so far we leave him, and the hordes of people who still agree with him, to his theory that it is a spirit scarer, while we glibely say to ourselves that "water, aqua, H_2O, plays an essential part in tissue life and in the activity of all the organs. It is quickly incorporated with the circulating plasma," etc.

One more example of folk lore treatment of disease and I have done. "In Bengal when small-pox rages, the gardeners are busy. As soon as the nature of the disease is determined the native physician retires and a gardener is summoned. His first act is to forbid the introduction of meat, fish, and all food requiring oil or spices for its preparation. He then ties a lock of hair or a cowry shell, etc., round the right wrist of the patient. The sick person is laid on the young and unexpanded leaves of the plantain tree, and milk is prescribed as the sole article of diet. He is fanned with a branch of the sacred nim tree and any one entering the chamber is sprinkled with water. Should the fever become aggravated and delirium ensue or if the patient sleeps little, the gardener performs the Mata Puja. This consists in bathing an image of the goddess causing the illness and giving a draught of the water to drink. To relieve the irritation of the skin pease-meal, turmeric flour, or shell sawdust is sprinkled on. On the night of the seventh or eighth day the gardener is busy. He performs many rites, and when the pustules are mature he dips a thorn of the karaunda tree in sesamum oil and punctures each one. The body is then anointed with oil and cooling fruits are given." The theory here is all wrong and there seem to be many unnecessary rites performed, but the practice founded on his experience, leaves very little to be desired. The patient is put on a cool bed, isolated and is kept on a milk diet. He is given water freely to drink. His skin is dusted over with a drying powder. The pustules are punctured with a clean thorn, rendered aseptic by being dipped in an aromatic oil. He is fanned to keep him cool and prevent flies settling on him. He is given water to drink and cooling fruits to slack his thirst.

Did time permit, it would be an easy and pleasant task to show how enormously medical practice has improved on common medical folk lore of the East and elsewhere. Such has not been our object, however, but rather to show that through all the superstition and ignorance, and in spite of these, the keen observation of man has led him frequently to do what is best for his sick brother and that usually his practice is vastly ahead of his theories.

The sick man of yore suffered much at the hands of his medical adviser, and still does in the East, as the latter tries by the aid of noise and perhaps flagellations to drive out the spirit of disease. But is the modern patient entirely to be envied when his fever, quelled by some recent synthetic remedy just discovered in some laboratory and perhaps tried on him for the first time, leaves

him collapsed and miserable? I think that if one dared to deduce a moral from the study of medical folk lore it would be somewhat of this nature: In the treatment of disease use plenty of common sense and avoid being carried to extremes by theories.

THE VICARIOUS ABSORPTION OF OXYGEN IN PULMONARY OBSTRUCTION.*

By Perry E. Doolittle, M.D.

The continuous inhibition of oxygen is one of the physiological necessities of life, and the lungs play the very important part of separating the oxygen from the air and supplying it to the blood, which carries it throughout the system. Ordinarily the lungs have sufficient capacity for separating all the oxygen required, but there are certain pathological conditions which interfere with this free separation, and where this interference becomes great enough to overcome the reserve lung capacity, the lack of sufficient oxygenation becomes a grave factor in the pathological condition.

Of the causes of obstruction, the chief are: (1) Partial occlusion of the passages leading to the lungs, as foreign bodies in the wind pipe, edema of the glottis and the extension of diphtheritic membrane into the larynx and trachea. (2) Thickening of the lining membrane of the bronchial tubes (inflammatory or otherwise) as in capillary bronchitis and broncho-pneumonia. (3) The occlusion or destruction of portions of the lung, as in pneumonia and pulmonary phthisis.

Of the diseases in which this lack of oxygenation becomes a most dangerous factor, the worst are laryngeal diphtheria, broncho-pneumonia in infants, and double pneumonia in adults; and it is especially in reference to the last two of these that I wish to draw your attention to-night to a means of vicariously supplying the much needed oxygen, as fortunately in the first named disease we have the surgical remedies of intubation and tracheotomy to relieve the obstruction.

In hydrogen dioxide we have a remedy capable of giving up oxygen in considerable quantities when brought in contact with mucous surfaces, and it is to the internal exhibition of this drug that I wish particularly to call your attention. Hydrogen dioxide, as you are aware, is water (H_2O) with the addition of another atom of oxygen (H_2O_2), the extra atom of oxygen being held in very unstable combination, and readily given up to any oxidizable material. Thus 16-34ths of its weight consists of

* Read before Toronto Medical Society.

oxygen in unstable combination and readily given up to the tissues of the body. As the oxygen given up by the hydrogen dioxide is in atomic form, its activity is much greater than in the molecular form in which it occurs in the atmosphere, hence it is very readily absorbed by the mucous surfaces and finds its way directly into the tissues, as my first illustrative case shows. In its full strength the hydrogen dioxide is so extremely active that oxidation of the tissues with which it comes in contact will take place, and it requires to be diluted to a point at which no stable chemical change will take place in the mucous tissues of the alimentary canal.

The dioxide of medical commerce is a 3 per cent. solution capable of yielding ten or twelve times its volume of oxygen, and in my practice I have diluted this four to one, but further demonstration will show whether a stronger or weaker solution would be more efficacious.

As robbed of its unstable oxygen the dioxide is simply water, there is no fear in its liberal internal use of the accumulation in the system of any deleterious or noxious principle; and it is in the free exhibition of it so as to add sufficient nascent free oxygen to the system to make up for the loss through restricted respiration that I seek to obtain. Under normal conditions the expired air has only given up about 4 per cent. of its total volume in the oxygen absorbed by the lungs, and the shorter the respiratory efforts the greater the proportion of residual air left in the passages with a consequent decrease in the proportion of oxygen absorbed.

When a considerable proportion of the absorbing pulmonary cells are put out of action, as in extensive pneumonias, and the system feels the effects of insufficient oxidation, the lungs make an effort by increased action to force the unaffected cells to do not only their own work but also the work of the diseased ones. The inflammatory condition existing also demands a greater quantity of oxygen than in health to assist in the reparative processes. To force sufficient blood through the unaffected sections of the lungs, the heart puts forth greater efforts, and under the existing condition of high temperature on the one hand and carbonic acid poisoning on the other, it weakens under the strain and threatens the life of the patient. By administering the dioxide in sufficient quantity per orem or per rectum, or both, to make up for the deficiency taken up by the lungs, we give the heart a healthy oxygenated blood to work on, we remove the demand in the system for more oxygen, hence we take away the lash to the heart urging it to more work, and we relieve the working air cells, already threatened from contiguity with edematous closing or inflammatory action, from the overstrain, thus not only reducing the danger from them, but also favoring the early resolution of the disease areas by supplying them with healthier blood.

I first tried the dioxide in a case of broncho-pneumonia in an infant three months old. Both parents were delicate, as was the infant, and the disease rapidly ran to an apparently approaching fatal issue with general cyanosis and every evidence of lack of oxidation. I felt that the child was dying for the want of oxygen, and having been using dioxide freely in external cases it occurred to me that I could get enough oxygen into the system by the stomach to relieve the most distressing symptom, and I ordered a four in one dilution, a teaspoonful to be given every five minutes till I should return. In less than an hour I was hastily summoned by telephone to the patient, and was met at the door by the nursing neighbor in attendance who called me aside and whispered that "that acid I had ordered her to give the baby had burned its mouth and also the skin on the outside where it had run down." Horrible thoughts of a druggist's mistake and carbolic acid burning came to me as I went to the bedside where the nurse had carefully covered the baby's face to hide the accident. On removing the gauze covering the nurse exclaimed, "Why, doctor, this isn't like it was when I sent for you, there was one bright red streak from the corner of its mouth," and what we then saw was bright patches on the lips, chin, and extending down on the chest and the child seemed to be breathing slightly easier. I continued the dioxide and in a few hours the lividity gave place to redness, the breathing became easier and the child recovered.

Another case. J. W., aged 42 years, developed pneumonia in lower right lung while out in the mountains with the construction gang on an extension of the C. P. R in British Columbia. Was brought to Nelson in a freight car, being thirty-six hours on the road, arrived at private hospital in the evening and left lung became involved during the night; had thoroughly blistered right side at the onset of the attack. Saw him next morning in consultation with his attending and another physician, who both considered his case hopeless. Temperature, 104½; pulse, 130; respiration, 56. Blistered side a very dull red and evidences of insufficient aëration. I suggested the dioxide, which was administered freely both by the mouth and per enema. I saw him again eight hours after when temperature was 104½, pulse 120 and respiration 27. The dull red of the blistered side had given place to a bright pinkish red. The case ran a course of six or seven days, and fever terminated by lysis, but the respirations never exceeded thirty. The dioxide was continued till the fall of the temperature. Pneumonia is especially fatal in the mountains; of the previous eight cases treated in the same hospital seven died. The patient made a complete recovery, and had gained thirty pounds in weight when seen a year later.

Dioxide of hydrogen has been recommended in small doses internally as a heart tonic in various conditions, including

pneumonia; but so far I have been unable to find any one who has administered it in sufficient quantity and for the purpose of supplying the deficiency of oxygen. Its administration does not interfere with given oxygen by inhalation, or with any other internal remedies which may be indicated, and in it, and in its free use, I believe we have a means of tiding over the acute stage of this dread disease. In broncho-pneumonia, also, it promises good results; and in laryngeal diphtheria, in which there is only partial occlusion, it will be of undoubted service pending surgical treatment, and may displace intubation or tracheotomy in cases of moderate severity; and as both the intubation tube and the open wound favor septic absorption, should give such cases a much better chance of life. In severe laryngeal diphtheria also I consider its free administration while awaiting the arrival of the surgeon will strengthen the heart's action and lessen the danger of collapse, and should sudden occlusion from loose membrane occur when introducing the tube, a longer time will be given in opening the trachea before suffocation extinguishes life.

Clinical Reports

CARBOLIC ACID POISONING: A MEDICO-LEGAL CASE.

By George Elliott, M.D., Toronto,
Assistant Demonstrator of Anatomy, Trinity Medical College.

The following were the conditions found in the body of a man of apparent age fifty years, who had died suddenly as the result of carbolic acid poisoning. The general condition of the body showed that the man had been well-nourished. There were no marks of bruises or injuries or stains of any kind on any portion of the body; particularly were there no stains on the hands or face and even the vermilion borders of the lips were free from such. On depressing the lower lip, the anterior portion of the lower jaw or gum appeared intensely whitened; the same portion of the upper was not so. The whole of the upper surface of the tongue clear back to its root was of a dirty white color, and suggested a previous heavy fur. The pharynx and pillars of the fauces presented a similar appearance. The œsophagus was opened through the neck. Its inner or mucous coat was whitened and could readily be stripped off from the subjacent coat. On smelling it, no odor other than natural was detected. The stomach was tied off in the usual manner. It contained about three ounces of a milky fluid. From the entrance of the œsophagus downwards over the external surface of this organ, the musculature seemed to be gathered into nodules or irregular contractions, whilst in the hollows between these nodules, there was apparent commencing inflammation. This nodular condition ended irregularly about three-quarters of the distance down to the pyloric extremity. The internal or mucous coat presented the usual longitudinal rugæ, but the color was decidedly slaty-grey and distinctly uniform throughout. Between the finger and thumb, the mucous coat came off like granular detritus. The appearance of the internal surface certainly suggested a chronic rather than an acute process. Both the internal surface and the fluid contained in the stomach exhaled a strong odor of carbolic acid. An interesting feature of the alimentary canal was that presented by the upper portion of the small intestine. From two to three feet of the small intestine, commencing at the pylorus and embracing the whole of the duodenum and part of the jejunum appeared to have been intensely inflamed, as through the serous coat it was blackish-red in color. It was entirely empty, while the mucous lining was dirty-red and granular, hemorrhage having occurred on to the mucous surface from some of the small vessels and subsequently

coagulated by the action of the carbolic acid. This part of the alimentary canal also smelt strongly of carbolic acid. The balance of the small and the whole of the large intestine were normal. The appendix showed chronic thickening.

The surface of the liver, spleen and kidneys showed darkened patches or dashes, not uniformly over the whole surface of the organs, but presenting an appearance as though a brush had been swept across them. Carbolic acid could be smelt in the kidneys by myself, and in the liver by my associate, Dr. Parry. The urine contained in the bladder was drawn off per catheter and measured about two drachms. It was very pale in color and gave out no odor other than normal. The bladder was opened from above, and the inner coat was seen to be congested, the arteries being very full and distinct.

The vessels of the brain and meninges were injected. No odor of carbolic acid could be detected. The right heart was full of dark fluid blood as well as the blood vessels leading from it, while the left was contracted and empty. The vessels of the lungs were also filled with dark fluid blood.

Chemical examination by the provincial analyst revealed carbolic acid in the contents and walls of the stomach, in the liver, small intestine, kidney, urine and brain.

Responding to a hurried call to this patient, I found the man on my arrival dead and my inquiries proving ineffectual as to what symptoms he had displayed before death, I thought probably that it might be due to one of those causes which only reveals itself in the symptom of heart failure; but as my information was so meagre the coroner was notified. I detected no odor, at the time, of carbolic acid. Another physician who saw the man while I was telephoning the coroner detected no smell of carbolic acid. Neither did the family physician, who arrived half an hour later. Neither did the coroner, although the two latter made special efforts in this direction. We know that carbolic acid has a very strong and clinging odor; and the fact that four physicians who saw the man within a short time of his death not detecting this peculiar odor, may or may not have been significant.

The Crown became seized of the opinion that this man had been poisoned in the first place and that it had been done chronically by frequently repeated small doses in the second place; and such being the position of the case, the questions naturally suggested themselves: Could an individual be administered carbolic acid in poisonous doses, without his knowledge, extended over a length of time; or could one dose capable of producing death be administered in such a manner that the victim would not know what he was taking?

Chronic carbolic poisoning internally administered is probably an unheard of thing; but we know that repeated irritations are

liable in time to set up chronic catarrh of the stomach, a chronic gastritis; and as there was evidence to show, both from the previous history of his health and possibly from the post-mortem examination, that he had been subject to stomach trouble for some time previous to his death, having a chronic gastritis, repeated administrations of the drug might set up the condition of ill-health, though I think we must regard this as very remotely possible, and especially so when we have to take into account the strong penetrating odor of the drug in question.

The other question is the more important one, and I think we must answer this in the affirmative. I believe it to be quite possible to administer carbolic acid so as to disguise the taste and the odor as well; and if a man were perfectly off his guard and not at all suspicious, a fatal dose might be thus administered. We cannot presume that every person knows the smell and the taste of carbolic acid, although it is a very common and every-day disinfectant and deodorizer. The specific gravity of carbolic acid, as set down in "Squire's Companion to the B.P.," is 1.064 to 1.067, heavier than water, and heavier than whiskey or brandy, the specific gravity of the former (whiskey) being not above .930 and of the latter .941. Upon a good dose of carbolic acid then a good dose of whiskey or brandy will float, and the whiskey and the brandy having odors peculiarly their own, and being uppermost, their odor meets the nostril first, and that of the carbolic acid does not—at all events when the liquids are first prepared—come through the whiskey; and even on stirring them together, I think you smell the whiskey and not the carbolic acid. This is the result of my own experimentation. That the peculiar taste of the carbolic acid is also disguised, I think there can be no doubt. Authorities seem to differ greatly as to the taste of this substance and its immediate local effects on swallowing. I have tasted it myself in solution, and in this form it has a sweet, pleasant taste. In this respect we must not forget that there may be an idiosyncrasy in taste as well as in action. In support of my contention that the taste may be completely, at any rate almost completely, obliterated, I will quote from a case reported in the New York *Medical Record*, by Dr. Frazer, of Stratford, Ont.: A woman having seen a domestic suffering extremely from the effects of carbolic acid self-administered, decided that if she herself ever had occasion to do likewise, that she would take it in something which would prevent all the unpleasant effects. Towards this end one day she mixed some beer and carbolic acid together and tried the taste thereof; it was found to be not bad. Then she again tried it mixed with whiskey, and it is stated she found this quite palatable. A few days later, having had a quarrel with her husband, she flew up stairs and drank an ounce of carbolic acid mixed with whiskey. She immediately went to sleep under the narcotic influence of the

carbolic acid, and when Dr. Frazer arrived this was the condition he found her in. Some hours later she was brought out of her unconsciousness and stated that she had felt no ill-effects from taking the drug in any way, whatsoever. There had been no unpleasantness of any description on taking and swallowing the mixture. She fully recovered without any after trouble.

Another case was recited in the same journal a little more than a year ago, where a ward-tender in a hospital in Ohio, or thereabouts, swallowed an ounce of pure liquid carbolic acid in mistake for an opiate. He was seen almost immediately by a house surgeon who reports the case; and the patient never at any time complained of pain or disagreeableness of the drug on swallowing or thereafter. A doctor in our own city of Toronto, by mistake, took a drachm out of a bottle, thinking he was taking an ichthyol mixture—and this is an example of a man, and a medical man at that, taking carbolic acid without noticing the odor of the drug, and very little, if any, unpleasantness of taste, although there was some pain in the throat thereafter.

For certain reasons, I tried the odor of carbolic acid in a glass of soda water, as dispensed from an ordinary druggist's fountain, flavored with essence of ginger. The carbolic acid was but faintly perceptible, although there was a drachm in the mixture. On swallowing, ginger would produce a transient burning sensation similar to carbolic acid, but would be more prolonged, as anesthesia soon follows the application of carbolic acid. Hot coffee or ginger tea would disguise the odor to a very slight extent.

As to whether the drug had been given for homicidal purposes, or whether it had been taken for suicidal purposes, the condition of the lips and gums in this case was important. If for homicidal purposes, you would, of course, expect that it would be given in a cup or a glass. The glass might shield the lower lip and the liquid come in contact with the lower gum, but the upper lip would be sure also to meet the liquid; in this case, however, the upper lip was void of any scarring or discoloration whatever. If for suicidal purposes, one would naturally expect that it would be taken from a bottle, which would be placed well between the teeth, and so permit of no contact with the lips by the fluid; the act of swallowing, ordinarily, would force some of the fluid forward between the lower teeth, the lower gum would be bathed with the liquid, and present evidences of contact, as were present in this case.

Against all this you must put the fact of the frequency of suicidal poisoning by this drug. So far as I have been able to learn, there has been recorded in the literature only one case of homicide by carbolic acid, and that of a very indefinite and questionable character; whilst hundreds of cases of suicide have been reported. The frequency of suicide by means of carbolic acid

is seen from the fact that in the year 1895 alone, one-third of the males and nearly one-half of the females who suicided in that year, did so through the medium of carbolic acid; this, of course, refers to suicides through the instrument of poisonous drugs.

The question was asked: "What effect would carbolic acid have upon hair?" This was asked to bring out whether any discoloration had taken place in the man's moustache. In transient application as this would be, carbolic acid has no effect, apparent to sight, on hair. Whether it does so or not under prolonged application I do not know.

The condition of the stomach and small intestine was for a time puzzling, the stomach apparently being in a chronic condition while the small intestine was most acutely inflamed as indicated to the extent above. The question arose: How long after partaking of carbolic acid before you would expect to find this condition of the small intestine. That the stomach was not more acutely inflamed, I think, was due to greater resisting power in this organ, and that it was hardened through being the subject of a chronic disorder, and that sufficient time had not elapsed since the ingestion of the irritant to produce more marked evidences of inflammation. On the other hand, some of the poison had no doubt been passed along into the small intestine, and had there set up acute inflammatory processes to an extreme degree. If we bear in mind how soon after the application of blistering fluid or mustard paste to the surface of the body, we get reddening and evidences of inflammation, we will have no hesitancy in coming to the conclusion that this condition of the intestine could be set up probably as early as fifteen minutes after the application of the irritant; and the reason why it was limited in its extent to two or three feet, was that the irritant had only passed down the lumen of the bowel that distance. On the other hand I believe that one of the best authorities on the subject of poisons and their effects, states that this condition of the small intestine can be set up simply through the presence of carbolic acid in the stomach alone, though the authority in question does not make the reason quite clear.

In this case in question no bottle was ever found on the premises, *i.e.*, in the house, which had contained carbolic acid. A large dose of carbolic acid soon produces unconsciousness; and extremely large doses, say two ounces, may cause death almost immediately by paralysis of the cardiac centre in the medulla. On this point, Lauder Brunton says: "Medium doses appear to cause death by paralysis of the respiration, so that artificial respiration may be of some use in preventing it; but large doses paralyze the heart also, so that death occurs in spite of artificial respiration."

Carbolic acid is a dangerous and powerful poison. One drachm, which is equivalent to about 110 drops, has produced

death; whilst on the other hand recovery has been recorded from as much as three ounces. Seeing that it is a substance largely used in domestic life, and bearing in mind the numerous deaths it has produced, accidental and otherwise, its sale should be guarded and restricted far more than it is at the present time. It is only within the last year that it has been declared an official poison in Great Britain.

A CASE OF PYONEPHROSIS

BY WALTER MCKEOWN, B.A., M.D., M.R.C.S. (ENG).

J. M., was admitted to St. Michael's Hospital two months since, suffering from sepsis. He was sixty-six years of age, and had enjoyed fairly good health up to eight months previously, when he was compelled to use a catheter. This he made no attempt to sterilize other than by placing it in water when not in use. He was never able to urinate without the catheter from that time up to his admission to the hospital.

His condition, when placed under my care, was as follows: Considerably emaciated, pulse small and rapid (120 to 130), temperature rising to 102° and 103° in the afternoon, with morning remissions; urine loaded with pus. A large mass could be made out in the left abdomen extending from the lower ribs to the crest of the ilium, forward to the umbilicus and back into the loin. It was tender and tense; there was no superficial redness, nor deep fluctuation. Considering the history of eight months' catheterization the temperature and the painful mass in the abdomen, a diagnosis of pyonephrosis was made. His condition was such that it was unlikely he would survive the administration of an anesthetic. I determined to try to open into the kidney, using local anesthesia. He was placed on his side on the table, and about two drachms of Schleich's solution injected in the line of the proposed incision an inch below, and parallel to the last rib. The patient was partially delirious and very restless. The introduction of the needle caused some pain, which in his condition he resented considerably. After waiting a few minutes, I cut down in the line of the infiltration. He complained of pain, but not more than from the needle once through the skin. I was able rapidly to go down upon the kidney, which was pushed into the wound, and open it freely. More than two quarts of pus escaped.

A drainage tube was put in, and the patient returned to bed. Contrary to my expectation he began to rally some days later and at the end of six weeks the discharge had ceased. He is now up and about and his general condition is fairly good.

Special Selections

GALL-BLADDER INFECTION IN TYPHOID FEVER.

By R. W. Marsden, M.D., M.R.C.P., etc.,
Medical Superintendent, Monsall Fever Hospital.

On September 29th, a youth, R. P., seventeen years of age, was admitted into the Monsall Fever Hospital. The history stated that he had been ill for about twelve days, commencing with repeated headaches. On September 20th he had pain in the back and legs. On September 23rd he took to bed, having then paroxysmal pains across the lower part of the abdomen. The pains were so severe that during the paroxysms he screamed out. At the same time diarrhea commenced, and continued till his admission to the hospital. The bowels did not act after admission. On and after September 25th he was delirious. On September 27th an examination of the blood showed the presence of the Widal reaction, and on September 28th he had vomiting, attacks of profuse sweating, and coldness of the extremities. On admission at 5 p.m., on the 29th, he was very noisy and restless, screaming almost constantly, and unable to lie still. A few rose spots were visible, the abdomen was hard, not distended, and the liver dulness was present. There was no jaundice. The temperature was 99.4 degrees F., the pulse 102, soft and moderately filled, but the heart sounds very weak. It was, however, impossible to make a satisfactory examination. The patient's distress seemed to be due to severe abdominal pain, and as the only localizing symptom obtainable was the history of pain across the lower part, tenderness being apparently general, a provisional diagnosis of intestinal perforation was made, and operation decided upon. A median incision below the umbilicus revealed no signs of peritonitis in that neighborhood, so a second incision was made in the right iliac region. On opening the peritoneum here several ounces of dirty, greenish mucoid fluid were evacuated, along with a solitary ribbon of what was thought to be lymph, about five inches in length and three-quarters of an inch broad. Unfortunately the patient collapsed, and the operation had to be discontinued. He died nineteen hours later without regaining consciousness.

The unusual features noted at the operation were: (1) limitation of the fluid to the right iliac region; (2) its mucilaginous and greenish appearance; (3) the readiness with which it was completely evacuated; and (4) the relative absence of lymph; the

signs of inflammation consisting of a general injection of the peritoneum covering the intestines.

Post-mortem appearances.—At the *post-mortem* there was recent lymph along the edge of the omentum and in the situation of the operation. The peritoneal surfaces of the coils of intestine on the right side of the abdomen were injected, and two or three ounces of bile-stained fluid were present in the pelvis. The gall-bladder was adherent to the hepatic flexure of the colon and to the omentum ; it was not distended, but contained a considerable amount of bile, some of which flowed away in making traction on the colon, and this drew attention to the presence in it of a perforation.

The bile was fluid and dark green, and devoid of any unusual odor. The walls of the gall-bladder were in places thickened, the thickening showing as an irregularity, with congestion on the peritoneal surface. Internally the mucous membrane was green, pitted with a large number of very small round or elliptical ulcerations. Apparently these were due to the separation of small areas of necrosis in the mucous membrane, since a number of brown spots were present, of a shreddy nature, and these when torn away left a depression similar to the ulcerations. At the fundus were two larger ulcerations, clearly defined, and their bases formed in great part by the peritoneum only. The largest ulceration occupied the tip of the fundus. It was about three-quarters of an inch in diameter, its base being very thin, again chiefly composed of peritoneum only, and it was in the centre of this that the perforation had occurred.

There were no gall-stones, and as the pitted nature of the mucous membrane, its darkly stained appearance, and the dark color of the contents, were against the probability of obstruction and consequent distension, one must conclude that mechanical influences did not play any prominent part in their formation.

As regards the other *post-mortem* evidence of typhoid fever, it is only necessary to mention that the intestinal ulcerations were few and small. In the ileum they were limited to the last six inches, and were small and round with raised margins. In the cecum there were a few ulcers, and these were of larger size, whilst in the first two inches of the ascending colon they were again small.

Histologically there were two interesting features: (1) The presence of well-defined collections of cells with small round nuclei in the connective tissue, stroma of the wall of the gall-bladder. They were mostly suggestive of inflammatory "lymphoid" nodules, and between them and the peritoneum there were several largish spaces filled with red blood corpuscles. (2) The second feature was the presence of areas in the liver substance, occupying only small portions of the lobules in which they occurred, where the liver cells had lost their outline, and the power of taking up

the staining fluid. In these areas there was an unusual collection of leucocytes, thus constituting patches of focal necrosis.

I have already drawn attention to the fact that at the operation, the extravasated fluid seemed to be limited to the iliac fossa, this limitation being so marked that immediately the contents of the fossa were evacuated no further evidence of extravasation was noted. In connection with this it is interesting to note that [1]Richardson says: "The right upper quadrant of the abdomen containing the liver, gall-bladder, and portions of the kidney, stomach, and duodenum is separated from the peritoneal cavity below by the transverse and ascending colon with their mesentery. Extravasations may, however, travel down along the right border of the ascending colon." [2]Robson, giving greater detail, says: "The large peritoneal pouch to which Mr. Rutherford Morison drew attention in a paper in the *British Medical Journal* for March 3rd, 1894—bounded above by the right lobe of the liver, below by the ascending layer of the transverse mesocolon, covering the duodenum internally; externally by the peritoneum lining the parietes down to the crest of the ileum; posteriorly by the ascending mesocolon covering the kidney, and internally by the peritoneum covering the spine—has long been recognized, but perhaps not sufficiently appreciated in gall-bladder surgery. It is interesting to note that it is capable of holding nearly a pint of fluid before it overflows into the general peritoneal cavity through the foramen of Winslow, or over the pelvic brim." The limitation of the fluid in my own case, with the consequent possibility of error if the incision, or a thorough search, had not been made in the right iliac region, along with the *post-mortem* evidence of inflammation in this area, not only illustrate the pouch above described, but accentuate the importance to which Mr. Robson refers.

Bacteriology.—Turning now to the bacteriology. In the first place, it would appear, from the observations of various writers, that normal bile is sterile. In typhoid fever, however, [3]Dr. Norton Smith says the possible presence of the typhoid bacilli in bile has been known for long—[4]Fütterer claims the credit for priority in the discovery of the bacillus in the gall-bladder—and he further adds that bile in the gall-bladder in the majority of instances contains the bacillus, very often in pure culture, and that in very many cases the micro-organisms are present in great numbers, so that if a drop of bile be examined under a microscope numerous bacilli may be seen. In 1897, in a discussion following a paper by

1. Annals of Surgery, 1893, vol. xviii., p. 388.

2. Lectures on Diseases of Gall-bladder and Bile Ducts. *British Medical Journal*, March 13th, 1897.

3. Goulstonian Lectures. 1900.

4. Münch Med. Woch. 1888. No. 19.

[5]Mason, Dr. W. T. Councilman also thought that typhoid bacilli are to be found in the gall-bladder in nearly every case, and that this constitutes one of the surest places to obtain a pure culture. Experimentally their presence in pure culture in the bile had been shown by [6]Blachstein and Welch, even 128 days after the intravenous injection of mild doses of a typhoid culture into rabbits, and in the same year [7]Dupré also reported a pure culture from the gall-bladder of a man dying about the 15th day of an attack of typhoid fever, although there were no pathological changes in the gall-bladder. The most important series of observations, however, was made by [8]Chiari in 1893, who not only stated that "the occurrence of typhoid bacilli in the gall-bladder is the rule in typhoid fever," but that "they increase, and may remain there a long time." He examined twenty-two cases, and found the bacilli present in nineteen, whilst in fifteen of these a pure culture was obtained. Similar results have been obtained by [9]Flexner, and in nine out of ten cases at [9]St. Bartholomew's Hospital.

It was only to be expected, then, that the typhoid bacillus would be found to play an important part in complications affecting this organ, and [10]Dupré, in 1891, operating for gall-stones six months after typhoid fever, obtained pure cultures of typhoid bacilli from the gall-bladder, whilst [11]Gilbert and Girode, in 1890, first reported suppurative cholecystitis caused by typhoid bacilli, as demonstrated microscopically and by cultures, cholecystotomy being performed five months after the attack of typhoid. Chiari, in 1893, also demonstrated their presence in pure culture in a case to which I shall again refer.

But in gall-bladder infection from typhoid fever Eberth's bacillus is not the only micro-organism concerned. Thus, [12]Mason says, the gall-bladder in typhoid fever is often infected by Eberth's bacillus, seldom by other organisms as streptococcus, and bacillus coli communis. [13]Cushing mentions five cases of post-typhoidal cholecystitis in which the bacillus coli communis was found in pure culture in the inflamed organ.

In my own case a bouillon tube was inoculated with a loop rubbed upon the mucous membrane, and placed in the incubator. A rapid growth occurred, the micro-organism being a motile bacillus, which was readily agglutinated by serum from a case of typhoid fever, and seemed to grow as a glairy film on potato, as

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5. Trans. Assoc. Amer. Phys. Vol. xii. 1897.

6. J. H. H. Bull. 1891. Pp. 96 and 121.

7. Thèse de Paris. 1891.

8. Zeitsschrift für Heilkunde Band xv. 1894. P. 199. 9. See ref. 3.

10. See ref. 7. 11. Mém. de la Soc. de Biol. 1890 and 1893.

12. See ref. 5.

13. J. H. H. Bull. May, 1898.

well as to only partially acidify litmus agar. Thinking, therefore, that I had to deal with Eberth's bacillus, I submitted the growth to Dr. Coutts, and have to thank him for the following report, which I have condensed : "On testing your cultures I found them give the tests for bacillus coli, or, at least, some of them. I found most of the colonies typically bac. coli communis, but a few were very transparent and somewhat like bac. typhoid. In all cases the transparent colonies, as well as those of the more typical bacillus coli appearance, gave a clumping reaction with a typical typhoid blood. Notwithstanding the clumping, however, it would be impossible, in the face of the gas and acid formation, and the growth on potato, to consider the organism as the typhoid bacillus. It must be put down, I think, as one of the bacillus coli group of a pseudo-typhoid type." It is interesting, however, to note that [14]Richardson, in an article on "Inflammation of the Gall-Bladder," says, "The bac. coli communis from the frequency of its presence seems to have an important *rôle* in producing gall-bladder infections. It must be borne in mind, however, that this prolific organism is very apt to crowd out of notice others which have much more pathogenic importance."

Mode of entrance of the micro-organisms into the gall-bladder.—Concerning the mode of entrance of the micro-organisms into the gall-bladder, [15]Mason expresses the opinion that this is effected through the biliary ducts with the supplementary agency of a contaminated blood current, whilst Councilman, in the discussion following the paper, thought that they were brought by the blood, having an easy entrance to the biliary ducts by the areas of necrosis in the liver. [16]Sherrington had previously shown that "though the blood be teeming with micro-organisms, none can escape through normal hepatic tissues. In 1896 [17]Hagenmüller (Paul) had expressed the opinion that the infection "results from the propagation of the intestinal inflammation to the gall-bladder, owing to the low systemic condition," and this view of an ascending infection, though not necessarily accompanied by an ascending inflammation is supported by [18]Robson and [19]Dr. Mark W. Richardson. The latter observer conducted a series of investigations, in which he found pure cultures of the typhoid bacillus in the gall-bladder, duodenum, and jejunum, with colon bacilli only appearing when the ileum was reached. He admits, however, that it is perfectly conceivable that the bacilli were excreted from a gall-bladder which was originally infected through the blood.

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14. *Amer. Jour. Med. Sciences*, 1898, N.S., Vol. cxv.

15. See ref. 5.

16. *Jour. Path. and Bact.* 1893.

17. *Thèse de Paris*, 1896. (Ref. Mason.)

18. See ref. 2. 19. See Keen, Surg. Complic. and Sequels of Typhoid Fever.

[20]Maurice Richardson, reviewing the different modes of entrance suggested, viz., the bile ducts, intestinal adhesions, and the blood, leans very strongly to the last-mentioned, though he thinks that distension of the gall-bladder, either by swelling of the mucous membrane or impaction of a gall-stone, is an important factor of the infection.

As regards the mere entrance of the bacilli into the gall-bladder it is now sufficiently well established that they may be carried by the blood-stream to various organs in the body, so that the gall-bladder might become infected through the systemic circulation. On the other hand, the frequency with which the bacilli are to be found in the bile makes it probable that this is not the usual channel of infection. Again [21]Cushing and [22]Osler have recorded cases of primary typhoidal cholecystitis, *i.e.*, of gall-bladder infection without an intestinal lesion, and [23]Guarnieri has shown infection of the biliary passages, liver and spleen in a case that presented no intestinal lesion, whilst [24]Mark Richardson found typhoid bacilli in the fluid from a distended gall-bladder by operation, where there was no distinct history of typhoid fever. In my own case the intestinal lesions were unusually small, few in number, and limited to the lowest part of the ileum, and the adjoining portion of the colon. Viewing the facts at our disposal, and keeping in mind the constant presence of the bacilli in the liver, as well as the paramount position of this organ in their destruction, as stated by Dr. Horton-Smith, I think one must conclude that, as regards the entrance of the bacilli into the gall-bladder, their most important passage is probably through the blood-stream, the liver, and the biliary ducts.

Lesions Produced.—Incidentally I have already mentioned the lesions which are produced, but this subject is deserving of further consideration. Apparently typhoid fever plays an important *rôle* in gall-bladder infections, for [25]Mayo Robson informs us that this disease "furnishes the museums with several specimens of infected cholangitis and cholecystitis, and also that though cholelithiasis is the most frequent cause of ulceration of the gall-bladder, yet typhoid fever and cancer are quite common causes." [26]Keen in his article on this subject says it is comparatively new, yet the relative frequency in the gall-bladder of surgical complications and sequels of typhoid fever, is in striking contrast to their rarity in the liver. As regards their frequency [27]Holscher, in 2,000 fatal

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20. See ref. 14.

21. J. H. Hosp. Bull. May, 1898. 22. Trans. Assoc. Amer. Phys., 1897.

23. Ref. *Baumgarten's Jahresberichte*, 1892. S. 234.

24. *Boston Medical and Surgical Journal*, December 16th, 1897.

25. See ref. 2. 26. See ref. 19.

27. *Münch. Med. Woch.*, January, 1891, Nos. 3 and 4.

cases of typhoid fever at the Pathological Institute of Munich, found diphtheritic processes in the gall-bladder, and suppuration in five cases, and one instance of perforation.

Murchison in his work on fevers gives three varieties: (1) catarrhal, with pus formation; (2) diphtheritic, as described by Rokitansky; (3) ulceration. He further adds that fatal peritonitis may result from the latter proceeding to perforation. Theoretically one would expect that "catarrhal inflammation" would constitute the simplest lesion, though the necessity for including pus formation does not seem so clear. On the other hand, if the "catarrhal inflammation" affected the cystic duct, one would expect distension of the gall-bladder to constitute the most prominent feature. [28]Da Costa gives an account of such a possible case in which the gall-bladder was distended with unhealthy looking bile, though he adds there were no concretions, no alterations of the coats, no adhesions, and no signs of inflammation of the biliary ducts.

The presence of typhoid bacilli, however, in suppurative cholecystitis has been shown by [29]Gilbert and Gerode, and further [30]Gilbert and Domenicini have produced suppuration in the gall-bladder and liver of rabbits by injecting a culture of typhoid bacilli into the common duct. Eberth's bacillus, however, is not the only micro-organism producing such lesions, for Naunyn is quoted by Robson as having found the bac. coli communis in the pus from three out of five cases of phlegmonous cholecystitis.

Cholelithiasis.—Though gall-stones were not present in my own case, yet the close relation between them, and the occurrence of cholecystitis either as cause or effect makes it imperative to briefly consider this subject. In the first place, as this case shows, the presence of gall-stones is evidently not necessary for the production of lesions, and Keen states that in thirty-four cases of cholecystitis, empyema or ulceration were found in the gall-bladder without any gall-stones, typhoid bacilli being identified by bacteriological examination in eleven cases. It is, however, highly probable that the previous existence of gall-stones either acts mechanically as a predisposing element in the production of cholecystitis, or shows the presence of pathological changes which might predispose to its occurrence.

A very interesting question, however, is the casual relationship of typhoid fever to cholelithiasis. In 1889 [31]Bernheim suggested that typhoid bacilli themselves might give rise to gall-stones by producing alteration or stagnation of bile, and in 1893 [32]Dufourt

28. On the significance of jaundice in typhoid fever, etc. *Amer. Jour. Med. Sci.*, 1898. U.S. 116.

29. *Mém. de la Soc. de Biol.*, 1890 and 1893.

30. *Soc. Biol. de Paris*, December 23rd, 1893.

31. *Dict. Encyclopédique de Dechambre.* See ref. 22.

32. *Rev. de Méd.*, 1893.

reported nineteen cases of cholelithiasis in which the first attack of "biliary colic" followed at varying periods after typhoid fever, thus in two in the second month, in six in the third, in three in the fourth, etc. [33]Osler also has reported a case of "hepatic colic" occurring for the first time in the fifth week of typhoid fever, in which an operation was performed, and though nothing was found to account for an enlarged and perforated gall-bladder, yet nine months later a gall-stone was discharged. In 1896 [34]Fournier, in one hundred cases of gall-stones removed at necropsies, found living or dead bacteria in the gall-stones in thirty-eight cases, colon bacilli being most frequent, and typhoid bacilli next. In the same year [35]Milian found typhoid bacilli in pure culture in gall-stones and in the wall of the gall-bladder, and [36]Naunyn showed micro-organisms in the centre of recently formed stones, whilst [37]Chantemesse found living typhoid bacilli in a gall-stone removed by operation eight months after an attack of typhoid fever. [38]Dr. Horton-Smith also gives experimental evidence by quoting Gilbert and Fournier, who produced artificial biliary calculi by injecting attenuated typhoid cultures into the gall-bladder of a rabbit, and Richardson, who used already agglutinated bacilli. The latter observer had shown that not uncommonly after death the typhoid bacilli may be found agglutinated in the bile. It is thus highly probable that the bacilli themselves may act as nuclei in the production of gall-stones, though their power in causing chemical changes with deposition of cholesterin has also been suggested.

Dr. Horton-Smith concludes that if "inflammation of the gall-bladder occur after a case of typhoid, and the specific bacilli be found in pure culture, the sequence of events in all probability has been, first the formation of gall-stones, and only secondly cholecystitis. In a few cases—and this is especially seen in those rare ones occurring during the fever itself—the gall-bladder may become primarily inflamed through the action of the typhoid bacillus without gall-stones being present." My own case belongs therefore to the latter class, though the micro-organism in this instance was apparently a variety of the colon bacillus.

I have already mentioned that I think the ulcerations were due to superficial necrosis in the mucous membrane, so that one must infer that these necrotic areas may be directly due to the action of the micro-organism or its toxins. A very similar case is reported by [39]Chiari, in which there were several necrotic patches

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33. See ref. 22. 34. *Thèse de Paris*, 1896 (see ref. 19).

35. *Gaz. Hebd.*, November 26th, 1896. 36. *New Syd. Soc.*, 1896, p. 51 (see ref. 3).

37. *Traité de Méd. Tome* 1, p. 764.

38. See ref. 3.

39. Uber cholecystitis typhosa. *Prager Med. Woch.*, 1893. No. 22.

on the walls of the gall-bladder, and the patient died from peritonitis, the direct result of cholecystitis. Areas of necrosis were also found in the mucosa by this observer in three of the nineteen cases already referred to; whilst [40]Courvoisier, in ten fatal cases of typhoid cholecystitis, found seven with sero-purulent exudate, occasional ulcers, and necrotic areas.

How long may micro-organisms remain in the gall-bladder? Apparently they may be found for an almost indefinite period after the attack of typhoid fever; for I have already instanced the two cases by Dupré and Chantemesse, in which the typhoid bacilli were found in pure culture in the gall-bladder when operating for gall-stones, after an interval of six and eight months respectively. The most remarkable case, however, is [41]Van Dungern's, in which the bacilli were found in pure culture in pus surrounding the gall-bladder, fourteen and a half years after the attack of typhoid fever.

Chiari, on finding the gall-bladder so constantly infected with typhoid bacilli, suggested that the pouring of the bacilli with the bile into the bowel may give rise to a relapse, and thus account for the possibility of re-infection and relapse by the giving of solid food, the food acting by exciting a stronger flow of bile. Concerning this possibility of re-infection by the bile, it is interesting to mention a case reported by [42]R. T. Morris of apparent primary infection of the gall-bladder, which was followed by the symptoms of typhoid fever running a typical course.

Symptoms.—It is evident that the disease is not unfrequently latent. This was mentioned by Murchison, and supported by [43]da Costa, who writes: "From the frequency, it might also be said constancy, with which infection of the gall-bladder happens in typhoid fever, it would be supposed that symptoms referable to it are very common; but it is just the reverse." [44]Mason says: "Inflammation may reach such a degree of severity that life is cut off without warning of the local danger. In more than half the cases recorded, either through latency of symptoms, or on account of typhoidal stupor nothing unusual was observed. Thus the gall-bladder may become distended, or perforation may occur, without detection." The two most constant signs, however, are pain and tumor. The former is generally paroxysmal and most marked in the region of the gall-bladder, and under the scapula. [45]Maurice Richardson says the pain may be in the epigastrium, or it may be referred directly to the usual seat of the vermiform appendix. It may, as in da Costa's case, be accompanied by flexion of the legs upon the abdomen, and is probably due, as this writer suggests,

40. See ref. 5. 41. *Münch. Med. Woch.*, 1897, No. 26.
42. *New York Med. Journ.*, 1899. LXIX., 122.
43. See ref. 28. 44. See ref. 5.
45. See ref. 14.

to distention of the gall-bladder. The paroxysmal nature of the pain may be indistinguishable from biliary colic.

According to [46]Mayo Robson, in all gall-bladder inflammations there is almost invariably a tender spot at the junction of the upper two-thirds with the lower one-third of a line drawn from the ninth rib to the umbilicus.

As regards the tumor which arises from enlargement of the gall-bladder, Robson says its size is variable even at different times in the same case, and its position varies with the size of the liver. In uncomplicated cases the free large end is movable from side to side, and it moves down with respiration. Occasionally a thrill can be obtained, but dulness on percussion is a very variable sign, whilst tenderness depends on the presence or absence of local peritonitis. In the genupectoral position the tumor is felt to move just beneath the abdominal wall in respiration.

[47]Leudet reported a case in which the tumor was of a recurrent nature. As a rule there is nausea or vomiting, but Maurice Richardson and da Costa both agree that the initial violence of these symptoms usually subsides. Jaundice is only seldom met with, and the bowels are usually unaffected, though there may be some stoppage of gas and feces. In da Costa's case repeated chills and sweats were observed, and this author also draws attention to the frequent occurrence of pulmonary complications.

Since recovery is not infrequent in catarrhal cholecystitis, whereas in ulcerative or suppurative cholecystitis active surgical interference is generally sooner or later required, it is advisable to attempt a differential diagnosis. Da Costa says, that "where there are abscesses in other parts of body, and one can exclude pylephlebitis, and hepatic abscess, suppurative cholecystitis may be inferred if pain and tumor be present." Also, "if there be a history of biliary colic and gall-stone, or if this arise in the progress of typhoid fever, or not long subsequent to it, signs of cholecystitis mean suppurative cholecystitis," whilst the presence of a leucocytosis may render some assistance.

Keen, however, divides the cases from a surgical point of view into two classes: (1) perforative, and (2) non-perforative. An examination of the cases of perforation hitherto recorded shows the necessity for prompt diagnosis, and immediate surgical interference. There can be no doubt that in both suppurative cholecystitis and perforation an early diagnosis with resort to operation will materially alter the future statistics of these dangerous complications; but in the case of perforation, the necessity for immediate action is inestimably more urgent. The onset of perforation is usually denoted by sudden pain in the abdomen, with symptoms of peritonitis, followed by collapse, the course being much the

46. See ref. 3. 47. See ref. 28.

same as in perforative peritonitis from other causes, even to the rare accident of encapsulation. The onset of the pain in the right hypochondrium, or the fact of its being most severe in this region, also the occurrence at the time, or previously, of symptoms pointing to an affection of the liver, such as "biliary colic," or jaundice, these will serve as localizing factors, though it has to be borne in mind that localizing signs may be completely absent. One other point is mentioned by da Costa, viz., that, compared with other causes of perforative peritonitis, the after course is not unusually comparatively slow, and in connection with this it is interesting to note that (See ref. 14.) Maurice Richardson thinks the influences from typhoid bacilli and the pneumococcus are possibly less fulminating than those from the colon bacillus.—*Medical Chronicle.*

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THE ONTARIO BILL FOR THE TREATMENT OF INEBRIATES.

As we go to press we learn that the prospects of the proposed Bill for the treatment of inebriates in Ontario being adopted by the Legislature this session are not as bright as they should be. We are both surprised and disappointed at this, as the Bill was drafted and approved of in the early part of last session, and it was fully expected that this Bill would be introduced last year. To an influential deputation, recently, the Hon. Mr. Stratton, Provincial Secretary, stated that the Bill had the approval of the Premier and other members of the Government, and was endorsed by the inspectors of prisons and the Warden of the Central Prison, but at the same time he could not promise that the Bill would be introduced this session. This is a decided setback, but we presume nothing can be gained by denouncing the Government for being so woefully dilatory in dealing with this important question. The point is, What can the medical profession do to bring about the needed legislation? Deputations from the medical societies have interviewed the Government to promote the passage of this Bill, but unfortunately this does not affect the private members of the Legislature. In matters of this kind it seems that the Government, instead of leading, waits to be led by the private members. Recognizing this state of affairs it would seem to be the duty of the members of the medical profession to take steps to have the private members of the Legislature brought in touch with the movement in favor of this Bill. To this end we ask every medical man in the Province to make this a personal matter, and to endeavor to bring his influence to bear with his representative in the House. Copies of the Bill have been sent to each member of the Local Legislature. This should be followed up by a personal letter from their medical constituents. If this should be done, and

done promptly, the Bill will go through all right this session. Copies of the Bill can be obtained from members of the Medical Council, and from Dr. A. M. Rosebrugh, Confederation Life Building, Toronto.

QUACKS AND FAKIRS.

A "divine healer" with a corps of assistants, likewise endowed, swooped down upon Cincinnati, Ohio, a few weeks since. Their success was marked from a financial point of view, and also, according to the published statements, remarkable in the results obtained in the alleviation of the pains and aches of the patients.

The Cincinnati *Post* sent a woman reporter to investigate, with the idea of exposing what they considered a fraud upon the community, and of protecting the sick and gullible patrons of the institution. The lady feigned sickness and apparently had little difficulty in convincing the healer that she was quite sick enough for treatment—prolonged treatment. She made several visits, and finally insisted that she had quite recovered. In thanksgiving for her recovery and with the idea of helping some other poor sufferer to see the light, she was asked for a testimonial. This testimonial was not published by the divine healer, but it has been, together with the foregoing facts, by the *Post*. It is as follows:

"To Dr. ——. Having entered the —— Institute in perfect physical condition, without an ache or pain, the managers of the institution were kind enough to supply me with a varied and choice assortment of ailments, for which I paid the very reasonable sum of $21.00. I can recommend your healers to all seeking a fine collection of diseases at a nominal price. Yours for health, J. M. P."

It is to be hoped that the example of the *Post* will be followed by journals in other cities. There is never any lack of material upon which to work.

LODGE PRACTICE IN BRITISH COLUMBIA.

On two or three previous occasions reference has been made in these columns to the action of the Victoria Medical Society in refusing to have any further dealings with the lodges in the matter of lodge or contract practice. Scanning the aspect of affairs now in the Pacific province, after a determined struggle for something over a year, it appears from the very latest reports that the doctors are wearying of the struggle and are on the eve of surrendering to the united influence and efforts of the fraternals. During the past summer the special committee appointed by the respective societies doing business in Victoria has been steadily pushing onward. Petitions were circulated throughout the length

and breadth of the entire province praying that the British Columbia Legislature would set aside or annul the Medical Act of the province, and thus permit of the fraternals importing practitioners from the other provinces of the Dominion as well as from the British Isles. These petitions, signed by the entire fraternal body of the province are now before the Legislature; but in the meantime, it is stated—the authenticity of which we cannot vouch for—that the doctors who have held out so steadfastly, are now anxious to make terms with the fraternal organizations in order to save their Medical Act as well as themselves, financially. We sincerely hope that this cannot be and is not true, but that the medical men of Victoria are standing firmly by their former resolution to have nothing more to do with lodge practice. Surely such an intelligent body of men as the British Columbia Legislature must be composed of would not stoop to such a mean and detestable act of coercion.

THE ANTI-CONSUMPTION CAMPAIGN.

The probabilities that the community will be thoroughly enlightened in reference to the dangers of infection in cases of tuberculosis are increasing daily. There is already established a Local anti-Consumption League, a Dominion anti-Consumption League, and we believe that soon we will be in the enjoyment of a political club anti-consumption league. All these organizations offer as an excuse for their existence the fact that one-fourth of the deaths of the Province is caused by tuberculosis—a condition undoubtedly alarming, but not a condition over which it is necessary to become hysterical. Any measure which will tend to diminish the death-rate of consumption is worthy and will receive the support of every well wisher of the race; but, while we are absorbed with the dangers of infection to the healthy, we should not forget the effect of the diffusion of the infection idea among the laity, upon the poor creatures already suffering from the plague. Is the contagion so virulent that they must be treated as outcasts and lepers? Are we not in danger of running to extremes in our anxiety to cure the evil? No one will deny at this day that consumption is a communicable disease, but yet it does not follow that to prevent contagion it is necessary to isolate the patient. Infection has been rare in the Brompton Chest Hospital, even before the necessity of the disinfection of the sputum was recognized and practised. Why? We have a lot yet to learn about tuberculosis and its bacillus. The necessity of disinfecting or destroying the sputum will be admitted by every one—the necessity of isolating the patient is not so evident, even when preached by philanthropists who strive mightily among themselves for the privilege of succoring him whom the new doctrines have made a pariah.

AN ACADEMY OF MEDICINE.

Toronto has over four hundred medical practitioners, a number sufficient, one would think, to form a strong local medical society or even several societies. A large majority of these men would be glad to belong to a society which was congenial to them, or from which they could derive information or relaxation. That only a few of the number are affiliated with one of the present existing societies, or if on the membership roll, do not attend, is proved by the small number present at the meeting of the oldest of the societies in the city: the Toronto Medical Society. Membership in this is open to any ethical practitioner, yet meetings held at intervals of two weeks do not attract more than ten or fifteen medical men. The Clinical Society, which aims to be an exclusive organization, meets but once a month. The attendance at these meetings is never more than half of the membership which, for reasons unknown to the ordinary physician is limited to sixty. The attributes necessary for membership in the society cannot be learned from a scrutiny of the membership roll. There surely must be some requirements for the fellowship; if not, such a society is always likely to be regarded as a clique. The third existing society, the Pathological, is a useful but necessarily small body. We believe that a city with four hundred medical men could do better. We feel certain that if the organization of an academy of medicine were undertaken by the right men it could be readily established. It would not only be a successful society, but would attract greater numbers to its meetings. This, in turn, would be an incentive to many who are now indifferent or discouraged by the small attendance at the meetings of the present existing societies to prepare papers of value; more original work would be done and more ideas put forward. There is no reason why we should not contribute our quota to general medical thought. The formation of a large society would, we believe, encourage many along this line.

THE MEDICAL ALLIANCE OF AMERICA.—At the regular stated meeting of the Toronto Clinical Society, held in St. George's Hall, Elm Street, Toronto, on the evening of March 6th, 1901, the following resolution was unanimously adopted: "That the Toronto Clinical Society is of the opinion that the prospectus sent forth by the so-called Medical Alliance of America, with headquarters in Montreal, is of such a character as to make it very undesirable that any member of the Profession should be associated with the Alliance in any capacity whatever. It is further resolved that a copy of this resolution be published in the first issue of each of the Toronto medical journals."

News Items.

A SOFT catheter turneth away wrath.

TYPHO-PNEUMONIA has been very prevalent during the past three months at Dawson.

Drs. ADAM WRIGHT, W. P. Caven and J. T. Fotheringham will shortly start on a trip to the Mediterranean.

THE Montreal General Hospital is considering the proposal of charging five cents per bottle for outdoor patients.

THE case of a herb dealer in the Province of Quebec against the College of Physicians and Surgeons there has been dismissed.

IN the City of Winnipeg, in February, there were 110 births, 62 males and 48 females; 71 deaths, 40 males and 31 females; and 39 marriages.

Dr. HARVEY CLARE, Tweed, Ont., will enter the asylum medical service at Orillia, succeeding Dr. St. Charles, who has been transferred to Hamilton.

THE Mount Royal Cemetary Bill, now before the Legislative Assembly of the Province of Quebec, seeks for powers to establish a crematory in connection therewith.

IN memoriam of her late husband, Mrs. J. B. Boulter, of Fort Coulonge, has donated $1,000 to the Montreal General Hospital. The amount will be set apart for the Endowment Fund.

Dr. CAMPBELL DAVIDSON, Montreal, has been appointed medical officer of the *S.S. Montford*, which will transport the Canadian contingent of Baden-Powell's police force to South Africa.

CARBERRY, Manitoba, is going to have a new hospital, and the ladies of the town are overseeing the undertaking. All the help they will ask from the male population will take the form of financial assistance alone.

THE Montreal Medical Society has debated the question of a civic hospital for that city and favor the proposal for a single hospital, the management to be under the control of the city, but to be under the medical control of the city hospitals.

PROFESSOR J. GEORGE ADAMI, of McGill, is a firm believer in the tuberculin test in cattle, and considers it would be a most unfortunate step if Canada were now to give up the tuberculin test, as advocated by some cattle breeders. Dr. Adami has always taken a lively interest in this subject, and his opinion thereon is a valuable one.

DR. WILFRID T. GRENFELL, Superintendent of the National Mission to Deep Sea Fishermen, last year established another hospital in Labrador. This is the third that has been established.

ON the 2nd of March the prevalence of smallpox in the Province of Ontario was as follows: Algoma, fifty-seven cases; Carleton, one; Huron, one; Middlesex, two; York, three; Simcoe, three; Muskoka, three; Renfrew, eleven; and Haldimand, one.

MCGILL is making a change in its academical dress. The bachelors will wear black hoods, bordered with fur; the masters, black silk, and the doctors scarlet. The linings to mark the faculties are now under consideration and will shortly be selected.

AT the regular bi-weekly meeting of the Undergraduates' Society of Trinity Medical College on Tuesday, the 5th inst., Dr. Charles Sheard gave an address on "The Final Disposal of Sewage," and Dr. W. H. Pepler read a paper on "Examining in Life Assurance."

THE Hon. Mr. Fisher, Minister of Agriculture, has been in Washington recently, and is said to have arranged with the United States authorities that the tuberculin test may be dispensed with in thoroughbred cattle from England ultimately destined for the United States.

Dr. R. TAIT MCKENZIE, of the Anatomy Department, McGill University, lectured in Trinity College on the afternoon of the 2nd inst., on "The Play of Expression on the Face." The lecture, which was highly interesting and fully appreciated, was illustrated with limelight views.

THERE are now six cases of smallpox at La Prairie, and Montreal is becoming rather anxious lest the disease spread to that city. The health officer, Dr. Laberge, will start a vaccination crusade at once. Montreal health officials are meeting with less opposition every year in regard to vaccination.

THE Montreal City Council is worthy of a backwoods village. The Quebec Board of Health recently notified them of the proximity of smallpox to the city, urging them to immediately provide a temporary isolation hospital for the reception of smallpox patients. The Council laid the communication on the table for a week.

Dr. M. S. FRASER, of Brandon, Man., was one of the delegates to the conference on tuberculosis held in Ottawa in February. The doctor is an official of the Indian Department, having the medical supervision of the Brandon Industrial School. He is shortly to issue a report on the question of tuberculosis as it affects the Indians, so that the necessary steps may be taken by the department to prevent its spread.

THE McGill post-graduate course of special instruction in medicine for general practitioners will be opened in the medical faculty of McGill University on Tuesday, April 30th, to continue for a space of six weeks, closing on June 8th. The fees for the full course, including the hospital fees, are $50.

THE total population of the asylums of the Province of Quebec is set down at 2,981 in the last annual report, and the cost of maintenance was $314,157.48. The asylum inspectors report that the three principal asylums, Quebec, Verdun and Longue Pointe in their hygienic condition are now perfectly satisfactory. The percentage of cures, respectively, was 31.75, 33.33 and 25.8.

THE Toronto Dental Society held its first annual clinic in this city on the 25th and 26th of February under the presidency of Dr. Webster of the Dental College. Amongst other interesting features was an exhibition of the X-ray in dentistry by Dr. W. A. Price, of Cleveland, and the surgical treatment of cleft palates by Dr. Truman W. Brophy, of Chicago. A report of Dr. Truman's remarks will appear in a future number of the DOMINION MEDICAL MONTHLY.

Dr. T. G. RODDICK, M.P., was in Toronto last week (March 1) arranging for surgeons to accompany the sealing fleet from Newfoundland, no surgeons volunteering to go from Montreal. The fleet numbers over 6,000 sailors, and the following doctors will accompany it this year, the first time in its history: Drs. McWillie, Martindale, W. F. Adams, McKinnon and E. H. Stafford. The doctors will report about the 6th of March at St. John's. The expedition will last six weeks.

THE Government of Quebec has a Bill before the Legislative Assembly of the province which will consolidate the Public Health Act. It will further provide that the Secretary of the Provincial Board of Health shall receive a salary not exceeding $2,400 per annum; and provides further that the Board of Health may appoint analysts, a statistician, and other necessary officers. There are provisions, too, to the fact that unvaccinated children may be prevented from attending school.

THE Sherbrooke, Que., medical men met in annual meeting during the last week of February and elected Dr. F. J. Austin, President; Dr. J. O. Camirand, Vice-President; Dr. E. J. Williams, Secretary-Treasurer; Council, Drs. W. D. Smith, L. C. Bachand and J. A. M. Elie. The lodge physician question came up for discussion and each member pledged himself to accept no position from any Society as "lodge physician." A meeting will be arranged between the physicians and the druggists of Sherbrooke to discuss "counter prescribing."

Dr. FRASER, of Brandon, Man., has recommended to the Indian Department that the female pupils of the Indian Industrial School at that place receive training and instruction in general nursing. Steps will be taken at an early date to carry this suggestion into effect. Regular lessons will be conducted by trained hospital nurses, and the female Indians will be employed on the reserves in nursing their people during times of sickness, and also in instructing them in the prevention of contagious and infectious diseases, notably tuberculosis.

Mr. DAVID SHAW, of Prince Edward Island, a first year medical student at McGill, while working in the laboratory of Professor Ruttan met with a very unfortunate accident recently. A neighboring student who was making an experiment with sulphuric acid and alcohol brought the tube to Shaw for his opinion as to the nature of a gas which was being given off, when the contents suddenly frothed up, burning his face very badly and destroying the sight of one eye completely. Dr. Ruttan states this was the first time an accident had occurred in his laboratory.

THE annual meeting of the Toronto Nursing-at-Home Mission was held on the afternoon of the 1st inst. The annual statement of the secretary showed that 591 patients—516 women, 11 girls, 28 men and 25 infants—were visited by the nurses during the past year. The total number of visits made was 5,577, and the nurses worked under 149 different doctors. In the dispensary department 3,163 people were provided with free medicine. The receipts during the year amounted to $1,661.60, the disbursements to $631.72; $88.90 was received by the nurses from patients for their services.

NO less than 132 subjects were furnished for dissection during the year 1899-1900 to the different medical faculties of the Province of Quebec. Dr. A. Hudon, one of the inspectors of anatomy at Montreal, says that the professors of anatomy at the various schools have had seventy-three subjects offered them since January 1st, 1900. McGill was offered fifty-three and refused three. Laval had twenty and Bishop's three. Dr. McKay, of Quebec city, states in his report that twenty-four subjects were conveyed from his district to Laval during the year. So much material was offered that some of it had to be refused.

THE last quarterly report of the medical superintendent of the Montreal General Hospital, Dr. E. M. von Eberts shows that 667 patients were treated to a conclusion during the quarter. Of these sixty-four died, or 9.5 per cent. If those who died within three days of their admission were deducted the mortality would be 5.7 per cent. In the outdoor department there were 10,733 con-

sultations, an increase of 1,352 over the same quarter a year ago. The medical students' fees paid during December amounted to $1,295. Dr. F. J. Shepherd strongly opposed the proposal to charge five cents per bottle for medicines for outdoor patients.

DURING the past year the Winnipeg General Hospital accommodated 2,649 patients. In the out-door department there were 1,435 consultations. Of the in-door patients 1,684 came from the city, 785 from other places in the province, 150 from other provinces, and 30 from the United States. There was a deficit of $4,510.50, which was owing to the smallpox outbreak early in the year. The nursing staff now consists of a lady superintendent, five head nurses, one district nurse and fifty pupil nurses. During the year 223 applications were received, and of these twenty-three were accepted on probation, and sixteen as pupils of the school.

THE report of the Committee which was appointed to make recommendations as to the establishment of a sanatorium for consumptives in the province of Nova Scotia, has been submitted to the Legislative Assembly now in session. It recommends a building for twenty patients on the congregate plan, no resident medical superintendent, but regular visits by two qualified medical men, the location to be at Dutch Village, near Halifax, or on the shore of Bedford Basin, at or near the village of Bedford. Dr. Reid, the Secretary of the Provincial Board of Health, does not favor the Atlantic seaboard as a site, and prefers a resident medical officer.

Obituaries

WILLIAM JOHNSON ALMON, B.A., M.D.

Dr. Almon, or as he was known in latter years, Senator Almon, was born at Halifax, N.S., on the 27th of January, 1816, and died on the 19th of February, 1901. He pursued his medical studies at the universities of Edinburgh and Glasgow, where he obtained his doctor's diploma in 1838. At one time he was president of the medical Society of Nova Scotia and also president of the Halifax Medical College. He was also consulting physician to the Halifax hospital and dispensary. For many years he acted as surgeon to the Halifax volunteer artillery. Dr. Almon always took a deep interest in historical study and research, and on several occasions called the attention of Parliament to the neglected condition of the national archives and some of the old Canadian forts. He was one of the founders of the Nova Scotia Historical Society.

DR. GEORGE M. DAWSON.

Although not a physician, it will be proper to notice the death of this distinguished Canadian scientist. George Mercer Dawson, C.M.G., LL.D., A.R.S.M., F.R.S., F.G.S., F.R.S.C., etc., Director of the Geological Survey of Canada, a son of the distinguished scientist, Sir William Dawson, for many years Principal of McGill University, was born, August 2nd, 1849, and died March 3rd, 1901. Dr. Dawson's geological work was mainly carried on in the north-west portion of the Dominion of Canada. In 1891 he served as one of Her Majesty's Commissioners regarding Behring Sea matters. During his life he was the recipient of a long list of distinguished honors.

DR. ALFRED MORSON.

Toronto's oldest physician, in the person of Dr. Morson, passed away on Sunday afternoon, the 3rd inst. Dr. Morson was born in England ninety-one years ago, and came to Canada when a young man. He practised his profession in Montreal and Ottawa, and was for many years surgeon of the old Great Western Railway. Sixteen years ago he retired from active practice and moved to Toronto, where he has since resided.

DR. THOS. E. CHASE.

Dr. Thomas E. Chase, of St. Margaret's Bay, Halifax Co., Nova Scotia, died on Thursday evening, the 7th March, 1901. He was fifty-three years of age, and one of the best known physicians in the county, where he had practised his profession for twenty-five years.

DR. H. OAKE MARTIN.

The death is announced of Dr. Martin, of Parkdale. He was a member of an old Essex County (England) family.

DR. MACDONELL, well-known in the Rat Portage District, died on the 6th inst. of pneumonia.

Abstracts

COCAINIZATION OF THE SPINAL CORD.

The new method of producing anesthesia below the diaphragm by means of cocainization of the spinal cord—spinal anesthesia—is being considerably used in Chicago, especially in the Cook County hospital, where it is continually given the preference, and has proved very satisfactory. The puncture is made between the third and fourth, or fourth and fifth lumbar vertebræ, entrance to the canal being determined by the aspiration of spinal fluid. One very soon gets familiar with the landmarks, and soon learns to pretty closely judge, by the avoirdupois of the patient, the necessary depth of the puncture. Like all other things in which perfection is approximated, a discerning practice is of value, and soon permits the failures to be greatly reduced or entirely done away with. Ten drops of a one per cent. solution of cocaine are used; and in eight minutes—the average period—total loss of pain-sense exists below the diaphragm; and this condition of total loss of pain-sense will last about one hour and a quarter, the normal sensibility gradually returning. Any operation during this period of anesthesia may be performed.

In some cases a period of more or less marked nausea follows the spinal injection of cocaine, but aside from this—and so far as the experience at the Cook County Hospital goes—the new method is without danger or untoward effects. Such results, however, may come out later, and may show in a large series of cases. In this connection it is interesting to note—for historical reasons, as well as for the opinions of a leading man—what Dr. M. H. Richardson, of Boston, remarks about this method and his observations at Paris last summer. Dr. Richardson says (*Bos. Med. and Surg. Jour.*): "At M. Tuffier's clinic at 10 a.m., one day in August, 1900, fifteen or twenty representative surgeons were present, among whom were Warren, Weir, Dennis, Murphy, Cushing, Mayo, Ochsner, Laplace and other Americans. The first patient was a woman of middle age, with a large abdominal tumor. She was seated upon the operating table, bending forward. The skin over the lumbar region was sterilized by scrubbing with soap and water, and later with an antiseptic, the nature of which I do not remember. A small, hollow needle about three inches in length was next inserted carefully into the spinal canal through a space to the right of the lumbar spine. The needle was slowly thrust in until the thin fluid, slightly tinged with blood, escaped. The syringe, a small one, was then attached to the needle and the solution of cocaine was slowly introduced under gentle pressure. The place of introducing the needle, the amount and strength of the solution, are immaterial. I do not

recall exactly these points, which for purposes of this communication, are, as I say, unessential. The immediate effect of the procedure was not noticeable. There was no outcry and no visible effect upon the patient. She was at once placed recumbent and her abdomen sterilized. In the meantime M. Tuffier prepared himself. At the end of about ten minutes—perhaps less—with the patient in the horizontal position, two large ovarian cysts were removed, and the incision closed. At this time I had an opportunity of examining the pulse. It was barely perceptible; its rate was between 60 and 70. The face was pale, the expression anxious. During the whole operation there was no outcry, no struggling, no restlessness. In answer to repeated questions there was the invariable reply that there was no pain whatever. The operation lasted about twenty minutes and was skilfully performed. As a demonstration of complete anesthesia it was a brilliant success. As a whole the operation and the operator impressed me—and I think, all present—most favorably. Nothing could be more satisfactory than the demonstration of the efficacy of the method of anesthesia.

"The second patient was a woman of from thirty to thirty-five, with a tumor of the left kidney. Cocaine was injected as in the previous case, with the same success. The patient said that she felt paralyzed. The operation was much more difficult than the other, but was brilliantly accomplished. The patient repeatedly answered that she felt no pain. She was, as I remember it, nauseated at or before the close of the operation. This was said not to be an unusual occurrence. The pulse was extremely feeble, but not accelerated. The face was pale, the expression anxious. M. Tuffier said that it was not unusual for the temperature to rise several degrees after the operation, but that it quickly subsided.

"The impression made upon me at the time was great. The method of administration was quick and sure. The spinal canal was at once entered without greater suffering than would naturally be caused by the deep insertion of a small needle. There was no hemorrhage, or not more than enough to redden slightly the cerebro-spinal fluid. The rapidity and efficacy of the anesthesia were remarkable. The great abdominal operations were admirably borne; and yet the whole impression was distinctly unfavorable to this method of anesthesia. The patients appeared in actual danger. The facial expression, the pallor, the pulse, were not unlike those of a patient in deep shock. Such an appearance I have seen, and would perhaps expect after the removal of a renal tumor filling the left side of the abdomen, however mild and successful the anesthesia. I should not expect it after the removal of uncomplicated ovarian cysts under ether anesthesia. The condition would indicate hypodermic or the intravenous infusion of normal salt solution, or at least of brisk stimulation and artificial heat.

"On the other hand, the appearance of these patients I have

seen in simple faintness, not resulting necessarily from pain, but from mental shock, or even from the sight of blood. The pulse and expression may have been owing simply to realization and horror of what was going on.

"The advantages of spinal over general anesthesia, however great it may be under certain circumstances, cannot be demonstrated except by years of observation and by thousands of experiments. I do not feel at all convinced that this method is without serious dangers. Time alone will show what and how great these dangers are. There are, it seems to me, definite indications for the adoption of the method—indications which will permit its adoption by even the most conservative. This limited field may, if increased knowledge proves safety, gradually become widened.

"From the anatomical point of view, however, it is inconceivable that the introduction of the needle into the spinal canal can be without danger, especially if the method is practised by everyone. I recall the great plexuses of veins which surround the vertebræ and the dura mater of the cord, as I have demonstrated them many times by solidifying injections. The cauda equina, too, cannot but be liable to puncture or other injury by the introduction of the needle. Indeed, one of the Americans present told me that a patient of his suffered for several months from paralysis of the bladder after this method of anesthesia.

"The extent and gravity of the danger can be known only by repeated use. Judging from the occasional effects upon the heart produced by subcutaneous injections of cocaine there must be some danger at least of cardiac depression when the solution is intradural. The dangers of the subcutaneous use of cocaine are apparently slight, however. I have seen but one case in which there was cause for the least anxiety. The patient received a urethral injection of a four per cent. solution of cocaine preparatory to the introduction of a sound. He became suddenly collapsed; the pulse was feeble, the face pale, the respiration sighing. His general appearance was not unlike that of M. Tuffier's patient. Under stimulation the disagreeable symptoms disappeared.

"Finally, there is the danger of introducing sepsis into the spinal canal through the needle. In skilled hands this danger is so slight, however, that I should not object to spinal cocainization on such grounds. The chief objection, after all, lies in the fact that a drug, the dangers of which are not fully known, is introduced into the spinal canal, whence it cannot possibly be removed, and where it must be left to work out its peculiar effects, however benecial or however injurious these effects may be.

"A feature of general anesthesia which is too little appreciated —which is, indeed, often forgotten. but which is one of its chief advantages—is that blessed oblivion which envelopes the patient

from the beginning to the end of the operation. He loses consciousness in his own bed ; he wakes there ; he escapes all those horrors of the operation which the imagination can depict and fear inspire."—*Clinical Review.*

DIET IN TUBERCULOSIS.

V. D. Harris (*Edinburgh Medical Journal*, Vol. VIII., II., p. 101) contributes an admirable and thoughtful article on "The Feeding of Phthisical Patients in Relation to the Wasting of the Body." Wasting is due either to diminished intake of food, increase in the output, or both combined. The question is asked whether there may not be a pretubercular stage of wasting due to a diminished intake of food when the body is in a state of lowered vitality. Fever is the usual cause of wasting, and here both factors are acting. The loss of weight is due first to diminution in the fatty tissue, and secondly to affection of the muscles, hence the effect of rest in increasing the weight.

In considering the result of treatment as estimated by weight gained, it is to be remembered that as there is a tendency to the deposition of fat, or the reverse, in "healthy" persons, a similar condition may exist in phthisical patients. Again, the normal condition of a healthy person is to remain at a constant weight, so among the phthisical the best state is that in which the weight increases until a satisfactory condition is obtained, which does not alter with the conditions of life of the patient. Weight rapidly gained is easily lost. The object, then, is to establish a normal metabolism.

The chief means of treating wasting are rest and feeding. With regard to feeding, the capricious appetite and weak digestion must be attended to. Harris points out that the dyspepsia, etc., may be functional, when the simple remedies of soda, rhubarb, nux, etc., will be useful, or due to a fibroid and wasting condition of the glands, in this latter case, the albumose foods which can be obtained in the market are useful, also milk, whey, and koumiss or wine jelly. Milk may well be partially digested by pancreatic extracts. Harris thinks it advisable to let the patient take sweet things if increase of flatulence and indigestion do not follow.

The great difficulty is with regard to starches, because of diminished diastatic action of the salivary and pancreatic glands. The malt foods are of undoubted use in this respect. Cod-liver oil can usually be digested even by the advanced phthisical, but it is to be remembered that if too much is given the oil appears in the stools. Harris discusses the kind of food: proteid, fat, or carbohydrates, which should be given to the patient.

Proteids maintain the ordinary metabolism of the tissue and may be stored up in the body as fat. With an ordinary diet of

fat, carbo-hydrates, and proteids, if the two former are increased the body puts on weight, while if the proteid is increased the weight may actually decrease, a fact which underlies one of the methods of breaking obesity.

The disadvantages to increasing the fats and carbo-hydrates are: (1) That these do not seem to effect proteid metabolism which is especially the point to be aimed at; (2) that they are somewhat indigestible. It is, therefore, not desirable to increase any one of these at the expense of the others, but if this be done it is better to increase the proteid material.

Harris emphasizes the importance of frequently changing the menu so that food may be given in the most appetising form. Relishes, such as well-made preserves, potted meats or fish, and sardines in oil are useful. Cream, either fresh or clotted, beef dripping, marrow of bones in the form of broiled bones, brains, spinal marrow of calves, yolk of egg in wine, fish roes, and caviare are further useful adjuncts.

Harris advises frequent small meals, which are generally better than the methods sometimes recommended of directing the patient to eat even if he has no appetite, the so-called "Pädagogische Behandlung" and the suralimentatism method of Debore, or forced feeding. In this latter the patient is fed by the stomach-tube with very large quantities of powdered meat or milk. Curiously, this does not seem to produce vomiting, and has met with some success. —*Medical Chronicle.*

THE ETIOLOGY OF SCARLET FEVER.

As long ago as November 18th, 1899, a reference to Dr. Class's work on the "Etiology of Scarlet Fever" appeared in *The Lancet*, but the present paper is called forth by the publication of the researches of Baginsky and Sommerfeld, who lay claim to the independent discovery of a characteristic micro-organism in the same disease, which the author considers as probably identical with the one he isolated more than a year ago. The organism in question, which the author found in three hundred successive cases of scarlet fever, is a micrococcus which, when grown on a medium which he describes as "earth agar," forms peculiar large diplococci, resembling in appearance gonococci. Grown on other media and under other conditions the coccus presents very variable appearances, and shows great differences in virulence. He further states that by other observers it has been found in the blood and scales of scarlet fever patients, and he himself has found it in many cases of scarlatinal sore throat, where there were no signs of general infection. It was also found in the blood and urine of a case of surgical scarlet fever. Experiments on animals show that

it possesses decided pathogenic properties, and the author describes certain experiments on inoculation of white swine by intravenous injection of the cultures, whereby a febrile attack was produced, with reddening of the skin, and followed by profuse desquamation. The diplococcus was recoverable from the blood of these animals in pure culture, and on *post-mortem* examination evidences of nephritis were found. He found further that animals kept in the same cage or pen with those inoculated not uncommonly developed the same symptoms, thus demonstrating its contagiousness. He further describes an experiment devised to show that blood from a convalescent scarlet fever patient will inhibit the growth of the diplococcus, whilst blood from a normal child was found to have no such effect; and he found also that blood serum from the same convalescent patient had the effect of giving a partial protection to white mice which were subsequently inoculated with virulent cultures. He does not, however, record any true "serum reactions" with the organism. It grows freely in milk without producing any visible change in it, and is thereby capable of accounting for the milk-spread epidemics of scarlet fever that have not uncommonly been met with.—*Medical Chronicle.*

ON THE EARLY RECOGNITION OF INTRA-PERITONEAL ASCITIC EFFUSION.

The early recognition of moderate quantities of free liquid in the peritoneal cavity is difficult, says Dr. L. Landau (*Centralbl. fur Gynak.*, No. 45, p. 1202), if not impossible, by the ordinary methods of examination. Percussion in varying positions of the patient and external palpation are not to be relied on. Exploratory puncture, because of the proximity of the intestines, is not to be thought of. And still, as this may at times be the earliest symptom of malignant tumors and curable conditions, the necessity of its early recognition becomes readily manifest. During several years the author has come to regard one sign as of almost pathognomonic value, and that is, even where small quantities of liquid is present, an impossibility to fully grasp the uterus between the two examining hands in bimanual examination. In these cases, with the patient on her back, the uterus pressed down seems to the examining fingers as though it lay on an air or water-cushion. If the patient's pelvis is now raised (Trendelenburgh posture), with the thighs adducted and legs flexed, in order to render the parts placid and relaxed, the bimanual examination yields another result, for now the uterus and adnexa are readily mapped out. The explanation, of course, lies in the fact that in the new position the liquid has gravitated toward the diaphragm. Of course, in all cases, the bladder must first be emptied. As

nobody else has ever described this method, the author believes it worthy of publication, in order that the profession may give it a trial.—*The Post-Graduate.*

A NOTE ON THE HYPODERMIC INJECTION OF OXYGEN GAS AND OF SOLUTIONS OF PEROXIDE OF HYDROGEN.

Ewart (*British Medical Journal*) remarks that the inhalation of oxygen gas is a very unreliable method of giving the gas, since much of it escapes into the surrounding atmosphere, and even the small part which is inhaled tends to induce apnea rather than increased activity of breathing. Peroxide of hydrogen yields an abundant supply of oxygen. A 10 per cent. solution of this was taken and a fifth of a pint was added to four-fifths of a pint of ordinary saline solution and the mixture infused under the skin. Ewart has treated five cases of severe pneumonia in this way. No discomfort was observed in the patients. There was always the usual emphysematous crackling. In the subcutaneous injection of oxygen an ordinary cylinder is used and the gas collected through water, the bubbling of which roughly indicates the rate of delivery, the gas is then passed through a glass tube charged with antiseptic wool and introduced into the subcutaneous tissue by a long needle, care being, of course, taken to avoid any vein. The leg was chosen as the site of the operation and a bandage temporarily tied round the upper part of the thigh so as to limit the spread of emphysema. As Ewart's experience has been very limited, he does not draw any conclusions, but states that part of the oxygen is taken up by the tissues, part passes into the circulating fluid. He does not recommend the method except in urgent conditions and where oxygen cannot be inhaled.—*Medical Chronicle.*

A NEW TREATMENT FOR PROLAPSUS OF THE UTERUS.

In thirty cases, ranging between twenty-one and sixty-six years of age, by Dr. M. J. Inglis-Parsons (*La Revue Médicale*, Oct. 31st, 1900, p. 140), and presenting the most pronounced varieties of prolapsus uteri, the author has employed the following method with uniform success. Usually one treatment was sufficient, but in long-standing cases the treatment had to be repeated several times. With or without anesthesia the author injects a solution of quinine or "other liquid" into the cellular tissue of the broad ligaments, as a result of which lymph is formed and "nature does the rest." The ligaments thus become sufficiently strong to support the uterus. A pessary is left in place during several days

and then removed. The operation is done under thorough asepsis, and usually neither pain nor fever results. In two of the cases pregnancy ensued with delivery at term. The first case was treated three years previously and the patient continues to enjoy good health. In most of the cases the prolapsus was complete—several dating back twenty years. Besides the prolapsus the va[illegible]al walls and pelvic floor were relaxed and distended. The uterus was large and heavy—and sometimes the cervix was ulcerated as a result of friction. Usually endometritis, resulting from chronic congestion, was present.—*The Post-Graduate.*

CHOLELITHIASIS AND PANCREATIC DISEASE.

Opie (*Am. Jour. Med. Sciences*) shows that disease of the pancreas is in many instances due to the compression of the duct of Wisburg, by which it opens into the duodenum, by the lodgment of a stone near the orifice of the common bile-duct. Damming back of the pancreatic secretion and its systemic absorption causes necrosis of the fat cells of the abdomen, and sometimes of the skin and pericardium. This is due to the action of its fat-splitting ferment, by which the fat is broken up into fatty acid and glycerine, the latter being absorbed, the former remaining in necrotic areas. Profound changes may be induced in the pancreas by the retention of secretion. These are illustrated by a number of clinical reports. First, an individual with a previous history of gall-stone colic is suddenly taken with epigastric pain, vomiting and collapse. He usually dies within forty-eight hours. A compressing stone is found in the bile-duct. The pancreas is enlarged, infiltrated with blood and hemorrhage may have occurred into the surrounding tissues. Foci of fat necrosis are usually present. Second, the course is slower and death comes in two or three months. The symptoms indicate infection and suppuration. Autopsy shows the offending gall-stones. The pancreas is dry, black and necrotic and lies in an abscess cavity. Fat necrosis is widespread. Third, acute lesions are not present, but there are chronic inflammatory changes.—*Medical Standard.*

RHEUMATISM AND THE THROAT.

St. Clair Thompson (Practitioner) believes that tonsillar inflammation is often the first indication of rheumatic infection, also that tonsillar disease is much more common in patients having the rheumatic diathesis. There are two varieties of rheumatic sore throat—faucial erythema and tonsillitis proper. The former is more

common in adults. In children tonsillitis is generally follicular in type: adults more often suffer from quinsy. Faucial erythema is an initial manifestation of acute rheumatism, Tonsillitis may be the actual primary lesion. We know that endocarditis has followed a non-scarlatinal tonsillitis unaccompanied by joint pains. In other cases the tonsillitis has immediately preceded an attack of arthritis or of chorea. Tonsillitis may also occur during, as well as at the beginning of, a prolonged rheumatic attack. We can prove no causative relation between peritonsillar abscess and rheumatism. It has been stated that one-third of all cases of pharyngitis and tonsillitis are due to the rheumatic taint, but the author thinks this percentage too high and believes that many are secondary to purulent affections of the nose, or catarrhal conditions of the stomach. The theory that amygdalitis is chiefly predisposed to by the rheumatic diathesis is not without its opponents. Especially is it pointed out that recurring angina is rare in those or an acute attack of rheumatism—that later in life the tonsils become less and less subject to inflammation, while the tendency to rheumatic conditions gradually increases. The salicylates are not specific against tonsillitis.—*Medical Standard.*

Physicians' Library.

Sexual Debility in Man. By FREDERIC R. STURGIS, M.D., formerly Clinical Professor of Venereal Diseases, Medical Department, University of the City of New York; Ex-Visiting Surgeon to the City Hospital, Blackwell's Island; author of "A Manual of Venereal Diseases"; one of the authors of "A System of Legal Medicine," etc., etc. Complete in one octavo volume. About 450 pages. Illustrated. Neatly printed and substantially bound in cloth, $3.00 net. New York: E. B. Treat & Co., Publishers, 241-243 West 23rd Street.

The author of this work has, for many years, devoted his attention exclusively to venereal and genito-urinary diseases. He has long been considered by the medical profession in this country as an authority in his specialty, and his distinguished ability has received ample recognition abroad. This work is a noteworthy one, for in it Dr. Sturgis gives the results of his extensive experience covering the observations of many years.

From Author's Preface: "The principal reason for writing this book is to introduce to the reading medical public sundry opinions the writer holds upon sexual weaknesses in men, which although they may be at variance with ideas generally received in this country he is convinced from experience are correct. Thus in the chapter on Masturbation he has combated the old and time-honored belief that indulgence in this habit is the necessary prelude to both physical and mental degeneration, and, while not glossing over the the dangers which may, under certain conditions, result from the habit, he has attempted to point out the folly of the hysterical denunciations which have been heaped upon it by pseudo-philanthropists and ignorant medical men. The question of castration in the case of masturbating lunatics has been brought up afresh for discussion and the author has frankly stated his reasons for believing, that, under certain circumstances, such a procedure would not only be justifiable, but proper. He has also separated spermatorrhea from pollutions, aiming to show that the two are absolutely distinct and separate diseases; that spermatorrhea is not the finale of pollutions, but is a disease *sui generis*, the symptoms, course, and treatment of which are entirely different from the latter. He has also striven to correct the foolish and ridiculous idea that the man afflicted with spermatorrhea is foredoomed to impotence and sexual uselessness. In the chapter on Prostatorrhea he has attempted to lay down the natural history and symptoms of this variety of disease, and has protested against the loose and unscientific method of regarding it as practically the same as prostatitis, with which latter disease, in his opinion, it has absolutely nothing in common."

A Manual of Syphilis and the Venereal Diseases. By JAMES NEVIN HYDE, A.M., M.D., Professor of Skin, Genito-Urinary, and Venereal Diseases, Knox Medical College, Chicago, etc., and FRANK HUGH MONTGOMERY, M.D., Associate Professor of Skin, Genito-Urinary, and Venereal Diseases, Rush Medical College, etc. Second Edition. Revised and enlarged, with 58 illustrations in the Text and 19 full-page lithographic plates. Philadelphia: W. B. Saunders & Co. 1900. Toronto: J. A. Carveth & Co. Price, $4.00 net.

The reputation of these two men as authors in diseases of the skin will ensure a ready welcome from the profession to this work. We are informed by the authors that this manual was written more for the needs of the student and general practitioner than for the expert. With this object in view, the authors have only included the practical facts connected with the study of these subjects and have avoided all controvertible theories, etc., which are to be found in the larger treatises. The chapters on Syphilis and Chancroid are particularly clear and to the point; as well as splendidly illustrated. Many of the lithographic plates, taken from Mracek's "Atlas of Syphilis and Venereal Diseases," have been introduced into this edition and will greatly enhance the value of the work. In the chapters on Treatment we notice that the authors hold views very similar to those of most physicians. They say, "Attempts to abort syphilis at the onset are usually as futile as similar efforts to jugulate the other maladies with which man may be affected." Of the preparation of mercury they consider the protoiodide the best for administration by the month. The chapters on Gonorrhea and its Complications are good, but do not appear to have received the same attention in illustrations as those on syphilis and chancroids. This part of the work has been practically rewritten and the most recent views on pathology and treatment of gonorrhea have been introduced. There is everything to be said in the praise of the work and the student or practitioner who wishes a modern work on these subjects cannot do better than purchase it.

Introduction to the Study of Medicine. By G. H. ROGER, Professor Extraordinary in the Faculty of Medicine of Paris, Member of the Biological Society, Physician to the Hospital of Porte D'Aubervilliers. Authorized Translation by M. S. GABRIEL, M.D. With additions by the Author. New York: D. Appleton & Co. 1901.

This book is a reproduction of a course of lectures delivered by Professor Roger at the University of Paris. We are informed by the translator that Dr. Roger made so many alterations and additions, that this volume may be considered a revised edition of the original lectures. The object of the work is to teach students

and even practitioners how to begin the study of the different branches of medicine and how to examine the sick. The plan adopted by the author appears to be a very rational method. He first explains the object of medicine and then, under the headings, mechanical agents, animate agents, infection, etc., discusses the different methods by which disease may be produced. In these chapters, which together comprise more than half the volume, will be found a concise but clear description of medical literature upon those subjects. The author has been very careful to avoid theories and hypotheses which are still under discussion, and has contented himself in reporting only those results which appeared to him to have been settled. In the chapter on the examination of the sick the author, in general terms, describes the methods which should be followed. Very little attention is given to bacteriological and chemical clinical methods. The last chapter of the book is devoted to the general principles of therapeutics. The book, taken as a whole, is a splendid work and will be found to be excellent reading for practitioners as well as for students.

Modern Surgery, General and Operative. By JOHN CHALMERS DACOSTA, M.D., Professor of the Principles of Surgery and Clinical Surgery Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia and to the St. Joseph's Hospital, Philadelphia. Third edition. Philadelphia and London: W. B. Saunders & Co.

The third edition of this work, which has been already widely recommended as a text-book for students, has been considerably enlarged as a result of the rapidly increasing additions to surgical science. The work is neither too bulky nor too condensed. An advantage which is of great value in a text-book is that, as a rule, one method of treatment which has proved serviceable in the hands of the author is given rather than a variety which only confuses the student when he has to subsequently pick out one of the many for himself. This is particularly true in the division devoted to the consideration of fractures. Another good point is that it is well indexed.

A Text-Book of Pathology. By ALFRED STENGEL, M.D., Professor of Clinical Medicine in the University of Pennsylvania; Physician to the Philadelphia Hospital, etc. With 372 illustrations. Third Edition. Revised. Philadelphia and London: W. B. Saunders & Co. 1900. Toronto: J. A. Carveth & Co. $5.00.

This volume covers the whole field of clinical pathology with the exception of that on the skin and of the organs of special sense. Pathological technique has been omitted, except in a few instances,

in order that the size of the work may be kept within bounds. The prominence given to pathological physiology is a commendable feature of the treatise and gives it a great advantage over some of the recent works on pathology. This character alone should insure a good reception for the work from the profession. The volume is divided into two parts, the first being devoted to General Pathology and the second to the Special Pathology of the different tissues of the body. The book contains 873 pages and 372 good illustrations. The present edition has been thoroughly revised, and much new matter added in order that the work may be up to date in every particular. We can heartily recommend this book to both graduates and undergraduates who wish to purchase a book on pathology.

Evans' Obstetrics.—A Pocket Text-Book of Obstetrics. By DAVID J. EVANS, M.D., Lecturer on Obstetrics and Diseases of Infancy in McGill University Faculty of Medicine, Montreal. In one handsome 12mo volume of 409 pages, with 149 illustrations, partly in colors. Cloth, $1.75, net; full flexible leather, $2.25, net. *Lea's Series of Pocket Text-Books.* Edited by BERN. B. GALLAUDET, M.D. Philadelphia and New York : Lea Brothers & Co.

This book has been written particularly for the medical student and young practitioner by one whose experience, both clinical and teaching, has specially fitted him for the task. Like the other volumes of this series of pocket text-books, it is compendious, concise, and readily intelligible, giving the essentials of its subject in its most modern aspect. Conforming to its purpose the arrangement of the book is that which has proved most advantageous for the beginner. Thus the physiology of pregnancy, labor and of the puerperium has been dealt with quite fully before consideration of the pathology. Normal labor and more frequent difficulties are dealt upon at length and with sufficient detail, whereas the rarer conditions and complications are described more briefly. Illustrations have been used liberally and with excellent selection, and the very moderate price places the book within the reach of all.

A Text-Book upon the Pathogenic Bacteria for Students of Medicine and Physicians. By JOSEPH MCFARLAND, M.D., Professor of Pathology in the Medico-Chirurgical College, Philadelphia; Pathologist to the Medico-Chirurgical Hospital, Philadelphia, etc. With 142 illustrations. Third edition. Revised and enlarged. Philadelphia : W. B. Saunders & Co. 1900. Toronto : J. A. Carveth & Co. Price, $3.25 net.

This work is upon pathogenic bacteria, and therefore no mention is made of pathogenic forms of life other than bacteria. Non-

pathogenic bacteria are also left out except in a few cases where they have been described on account of their confusing resemblance to pathogenic forms. The book is divided into two parts. Part I. is devoted to several considerations of the subject such as the biology of bacteria, infection, immunity and susceptibility, culture media, experimentation on animals, bacteriological examination, of air, soil, water, etc. The sections on immunity and infection have been entirely rewritten in this edition, and brought up to date. When we consider that our knowledge of these subjects is small, we must congratulate the author in presenting the conceptions and theories in such a lucid manner. Part II. is devoted to specific diseases and their bacteria. The matter on these subjects is presented in an able manner. The article on diphtheria is excellent. Students in medicine will find this book of Dr. McFarland's an accurate and practical work. It should continue to meet with success.

Ballinger and Wippern on the Eye, Ear, Nose and Throat. A Pocket Text-Book of Diseases of the Eye, Ear, Nose and Throat, for Students and Practitioners. By WILLIAM L. BALLINGER, M.D., Assistant Professor of Otology, Rhinology and Laryngology in the College of Physicians and Surgeons, Chicago, etc., and A. C. WIPPERN, M.D., Professor of Ophthalmology and Otology in the Chicago Eye, Ear, Nose and Throat College. In one handsome 12mo volume of 525 pages, with 150 engravings and 6 full-page colored plates. Cloth, $2.00, net; flexible red leather, $2.50, net. Philadelphia and New York: Lea Brothers & Co., Publishers.

A compendious, authoritative and practical work treating the closely related subjects covered in this volume possesses special advantages for students and general practitioners. Diseases and abnormalities of these organs are among the most common of ailments and every medical man should be equipped to handle them. Such a work as the present will convey a fundamental grasp of these specialties without extensive research, and it will be found particularly convenient for quick reference. It reflects the most advanced state of all its subjects both in theory and practice, ample space being reserved for the departments of diagnosis and treatment. It is abundantly illustrated and issued at the very moderate price characteristic of its series.