The China Medical Journal.


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The China Medical Journal
PUBLISHED BY
The Medical Missionary Association of China.
The Subscription Price for The China Medical Journal is Four Dollars a year. There are six numbers in each volume.

Subscriptions should be forwarded to the Presbyterian Mission Press, Shanghai.

Articles intended for The China Medical Journal should be sent to the Editors, who solicit contributions from all Medical Practitioners in China, Corea, Japan, Siam, or elsewhere.
RAYNAUD'S DISEASE, C. M. S. HOSPITAL, NINGPO.
Condition June 1, 1908.

One week later than other illustration. Note higher level of asphyxia of legs and the former line of demarcation, knee areas, lower lip gangrene, malar eminence.
SOME REFLECTIONS AFTER TEN YEARS WORK IN CHINA.*

By Arthur Stanley, M.D., B.S., Lond., D.P.H., Health Officer of Shanghai.

It is scarcely necessary for me to say how much I appreciate being asked to read a paper to this Society. I must crave your indulgence in listening to the following very sketchy record of some reflections after ten years work in China, jotted down, as they have been, during the few quiet intervals of a busy office, where the telephone and the chit coolie combine to make life a nerve destroying racket and where connected thought is well-nigh impossible. Under these conditions the mind tends to become monkey like in its agility at the expense of its proper function.

BERI-BERI.

I should like to say something about beri-beri, a subject at which I have worked hard without apparent success. Negative points have, however, been established, which bring one a little nearer the finding of the true cause.

Inasmuch as beri-beri frequently causes peripheral neuritis, a pathological condition usually associated with toxœmia, food would, in the absence of a primary lesion (as in diphtheria), seem especially indicated as a cause. For the same reason the cause would be met with in specifically contaminated food rather than in qualitative or quantitative changes in diet, as held by the Japanese authorities. Japanese opinion appears to be based solely on the changes of diet made in the Japanese navy and army at the time of their modernisation. Many other changes were, however, made at this time and greater attention devoted to maintenance of health. These other changes

*Read before the Shanghai Branch of the C. M. M. A., December, 1908.
might also account for the diminished incidence of beri-beri which, even at the present time, is, I believe, one of the most common diseases among Japanese soldiers and sailors. From observations on the feeding of municipal prisoners on quite a large scale extending over some years I feel convinced that the cause does not generally reside in food. Beri-beri appears to be largely an institution disease, being mainly incident on places where the poorer class of natives are aggregated in large numbers. This favours the idea of propagation by contagion. As the occurrence of beri-beri is most marked among the classes that are usually infested with vermin and, in institutions, especially in prisons, where the worst of these classes are closely aggregated, its propagation by fleas and allied insects, which puncture the skin, seems probable. And the same remarks may apply to the spread of relapsing fever, typhus fever and plague,—the so-called filth diseases. The fact of the blood in beri-beri being sterile when sown on ordinary culture media does not necessarily negative this view, as the cause may be protozoal or an ultra-microscopic organism not growing on the usual media.

Beri-beri does not appear to be associated with any particular trade or occupation. Something more is required for the prevention of the spread of beri-beri than isolation of cases as they arise, followed by disinfection. At the time these observations were made, namely from 1898 to 1902, it was never attempted to systematically free the prisoners from body vermin. This it is proposed to do by having the prisoners properly washed on admission to the cells; their clothing being taken away for steam disinfection and sterile clothing given them to wear, combined with frequent pulicidal disinfection of the cells. As a result of this I anticipate the suppression of the spread of beri-beri among municipal prisoners.

The maximum incidence of beri-beri in Shanghai is towards the end of the summer.

The marked and apparently primary degenerative action of beri-beri on heart muscle, like diphtheria and to a less degree like that produced by influenza and alcohol and arsenic poisoning, all of which may cause peripheral neuritis, and the remarkable clinical resemblance of beri-beri to diphtheria in the frequency of death from sudden heart failure would indicate a toxœmia. It is somewhat remarkable that beri-beri and diphtheria are the diseases in which sudden fatal heart failure occurs, the relative frequency of which is shown by the following figures:

Among 500 cases of diphtheria under my charge at the North Western Fever Hospital, London, there were 80 fatal cases; 30 of these being from sudden heart failure.
Among 341 cases of beri-beri under my charge in the Municipal Isolation Hospital there were 72 fatal cases; 31 being from sudden heart failure.

No medicinal treatment of beri-beri appears to be of any avail. The problem of the future therefore as regards beri-beri is to find the organismal cause, whether bacterial or protozoal, and the mode of inoculation. We are, I think, a little nearer the true cause now than we were ten years ago and, as regards the mode of inoculation, I believe that it will soon be practically proved that body parasites are the culprits.

FEVER.

The word 'fever' is perhaps the most abused term in medicine. In these days of the easy finding of the malarial parasite, one still hears of patients having a touch of 'fever' or that a child is 'feverish.' The circumstance of fever would appear to be intended by nature to be beneficent. The cause is almost invariably a parasitic poison, and the increased activity of all the vital organs is nature's reaction. Nature throws out enormous energy to surround a suppurating point in the skin by protective cells and finally casts off the offending mass of dead tissue during the course of an ordinary boil. And, parenthetically, it may be remarked that it may be held to be bad surgery to open a boil as nature does the work perfectly in her own way, with less liability to general or local infection. In the same way that, by local inflammation, nature, in more than 99 cases out of a hundred, successfully fights parasitic growth, so, as a rule, does she stimulate the vital organs of the body to increased action during the course of a fever, that general poisons may be neutralised by the anti-bodies produced and by the generally increased functions of the body associated with the physical condition known as 'fever'. Fever, therefore, under most conditions, being the outward sign of nature's antagonism to something injurious, is to be desired, and the use of antipyretics and so-called febrifuges for the purpose merely of bringing down the temperature may be considered wrong.

HEAT-STROKE.

From the subject of fever one may pass naturally to that of heat-stroke. It has for some time been recognised that the term 'sunstroke' was a misnomer, for in the great majority of cases there had been no direct action of the sun's rays. From my own experience I feel convinced that as long as the general body temperature is kept somewhere about normal that the direct exposure of the head to the hottest
sunshine has no injurious effect. Coolies and sailors working almost naked during the summer with the head exposed to the sun also bear out this view. Still later it was found that heat was only of importance when associated with atmospheric humidity, and lastly that the high reading of the wet-bulb thermometer was a very important factor in the causation of heat-stroke. From the occasional epidemic character of cases of heat-stroke a specific germ has been imagined, but it may now be accepted that a high wet-bulb temperature is the essential factor in the causation of heat-stroke.

Mr. Tyler's experiments on sensation scales confirm the idea that, except for very dry conditions of the atmosphere, the readings of the wet-bulb thermometer indicate very closely the degree of discomfort due to temperature and humidity and that the wet-bulb readings form the best available means for comparing climates.

Some experiments on animals which Mr. Tyler and myself made last year had for their object the determination of the maximum conditions of temperatures and humidity which animals can endure. Each experiment consisted in the artificial production of heat-stroke under varying conditions of temperature and humidity. The mouse was chosen as a convenient animal and the problem selected for solution was the conditions of temperature and humidity that a mouse could endure for ten minutes without collapsing. Fifty-four observations were made and a curve of the results plotted out, which tends to show the great relative importance of humidity in determining collapse from high temperatures.

The markedly evil effect of humidity when combined with high temperature is due to the fact that the loss of heat from the skin by sweating and evaporation is prevented, so that the external cool region of the body tends to disappear. This external cooling action is probably of greater degree than is usually thought. I have often noticed during the hottest days of the summer when wearing cotton drill clothing with no underclothing, which allowed the air to circulate freely between the garment and the skin, that, on placing the hand on the trunk, the surface felt strikingly cold, i.e., several degrees cooler than the palm of the hand.

Heat-stroke occurs mostly in hot moist climates. The climate need not be very hot in the general meaning of the word—often the temperature does not exceed 90°F, the essential factor being the combination of excessive humidity and high temperature. The wet-bulb controls the whole question of the rise of the body temperature. General exhaustion from excessive exertion, weakness and especially
alcoholism are often contributory causes. The experiments of Haldane and Sutton show that once the balance of the mechanism of heat regulation has been definitely upset by high temperature combined with abolition of heat loss by evaporation, a vicious circle is established. The internal temperature rises and, as a result, the oxidation processes, and therefore the production of heat also increases, so that the body temperature rises still further and so on. Once the ball has been set rolling it gathers speed and it is difficult to check its progress. The body shows no power of readjustment with a higher level of body temperatures.

It has been shown that metabolism increases with rise of internal temperature of the body, and in this way is comparable with a simple chemical reaction. The increase in metabolism is almost entirely increased consumption of carbohydrate material as shown by an increase in the respiratory quotient—vol. CO₂ exhaled, divided by vol. O₂ absorbed. Experiments have shown that the carbohydrates are the first to be sacrificed when the body loses its power of compensation for heat and its internal temperature rises. There is no marked increase of nitrogen excretion. And this agrees with the well-established value of non-nitrogenous material in limiting the destruction of protein. This has a bearing on the feeding of tropical races who consume diet in which carbohydrate largely preponderate, ensuring the resistance of the body to over-heating. It also tends to show that during the hot weather a diet consisting more largely of carbohydrates is desirable among foreign residents in China. It moreover indicates the value of a diet containing an excess of carbohydrates in feeding fevers.

The indication for treatment for heat-stroke, therefore, is vigorous reduction of the internal temperature of the body by the internal and external application of cold and the promotion of evaporation from the skin surface. Cases are continually reported where this principle of treatment has been neglected and purely drug treatment (strychnine, etc.) relied on, with fatal consequences.

DRUGS AND PATENT MEDICINES.

The popularity of patent medicines seems to be due to

(1.) The desire among the public to avoid doctors' fees.
(2.) The desire among the ignorant for the mysterious rather than for the known. Magic is the bastard brother of medicine.
(3.) Well thought out advertising on a large scale, consisting chiefly of setting pleasant traps for the gullible. The press are not free to expose the fraudulent manufacturer or to promote a scheme for the suppression of quackery, as they are virtually dependent on advertisements for a large part of their profits.
(4.) The business resourcefulness of the patent medicine manufacturer.
(5.) The medical profession allowing itself to become the unconscious agent of the manufacturers. It has accepted, without verifications, many of their most audacious statements and found it convenient to pander to the popular taste for new remedies by prescribing medicines and foods of unknown composition.

(6.) Governments not liking to interfere with the liberty of the subject.

The attempt to stamp out the opium habit in China has produced a multitude of anti-opium medicines. Many of these contain morphia, others atropin, and others consist merely of inert matter. They may all be classed among the frauds, active or passive. Even in the hands of a specially qualified medical man the cure of the opium-habit by means of drugs is one of the greatest difficulty; that a proprietary medicine could effect such a cure is practically impossible.

It is indeed remarkable that people who would never trust their watches and boots to an amateur to repair, readily yield their bodies to the prescribing druggist and patent medicine proprietor, whose main object is to make money out of the gullible. Holloway died worth £3,000,000, exclusive of statues.

In the matter of drugs it is perhaps best to strike the mean between the therapeutic nihilists who would banish the whole pharmacopoeia to oblivion and those credulous souls to whom every new drug from a German factory is a gift of heaven. But it would be a safe rule never to prescribe a drug or food whose composition is not clearly known.

As regards the public, when a knowledge of the general principles of physiology and the laws of health is the common property of all, the belief in most drugs will cease and quackery will die a natural death. Medicine will then no longer be looked upon as the art alone of curing disease, but as the science of preventing such as cannot be altogether abolished. Meanwhile the fittest will survive.

Prof. Osler, for whom I have the greatest admiration, is a man of firm convictions, and is not afraid to wander off the beaten track. A great believer in hard work as a preventive of human ills, he has no patience with the sickly, drug-taking individual, who is for ever bewailing his fate and resorting to patent medicines. 'Be sceptical towards the pharmacopoeia as a whole' and 'He is the best doctor who knows the worthlessness of most medicines' are two of his sayings.

EXERCISE.

It is difficult to say whether the desire for exercise beyond that required for daily work is a vice or virtue. Some of the healthiest men boast that they never take exercise and say that their office work is sufficient, while others alternate enemas, liver pills and saline drenches
with bursts of violent exertion, which they consider necessary to health. There can be little doubt that man is very like a sheep in his desire to follow the conventional throng. The social instinct is very strong and there is an innate tendency to be with the majority. The old resident who, in the hot weather, thinks walking, especially in the sunshine, most dangerous, does not hesitate to sweat away almost to exhaustion at a social game of tennis. The object of exercise is to keep physically fit. To be physically fit means that the heart is in a condition to respond to all ordinary calls upon its muscular wall. Violent exertion taken at irregular intervals is, I think, to be condemned; still more so when the atmospheric conditions are exhausting, such as those of a Shanghai summer. It is probably a mistake to keep the body in a condition above normal if long life is desired.

Perhaps the best index to the right amount of physical exertion is one's own feelings, but it is necessary to eliminate the mental stimulus of sport, which may obscure physical sensation and lead unawares to injurious physical exhaustion. Taking exercise by means of the stimulus of a game resembles, in many ways, stimulating the brain to further work by alcohol. A game may be an exercise taken under artificial stimulation. From a medical point of view racing should not be encouraged. Athletes are said to be usually short-lived. Sport is of true value when its pursuit renders the man better fitted for carrying on his daily work. There is perhaps nothing so beneficial to health as dawdling in the open air. Perhaps the best recreation for the busy man is lying on the grass. Recreation and exercise should be synonymous. At the end of a hard day's work the adult who wants violent exercise is an abnormality. Young children are always in a condition of muscular movement, but in adult life movements becomes specialised. A man sitting over a desk all day can get a good deal of exercise at his work in writing, talking, thinking and manipulating the telephone, but he will become etiolated, like a plant kept in the dark, unless he has recreation in the open air. But recreation need not always consist of violent muscular exercise. A man who is feeling off colour from indigestion—a condition frequently called 'liverish'—is often advised by his friends to sweat it off with tennis or a ride and gets worse, while, if he were told to potter about his garden, he would most probably be as well as ever the next day.

In these strenuous days the indication is that during adult life most exercise should be utilitarian. Swimming, boating, sailing, gardening, cycling, photography, sketching, the pursuit of natural history, shooting
and fishing are all utilitarian locomotive exercises, and as such, to be recommended. But foot-ball, base-ball, hockey, tennis, fives and cricket are important during early life, not only as a means of recreation but in the development of character.

And in discussing recreation it seems to me that the greatest recreation of all is sleep. In Shanghai, where social and other calls are so insistent, the importance of sleep is greater than under normal conditions of life. And up to early manhood at least I think one would be safe in holding that the more sleep the better.

On the whole, therefore, I am of opinion that more harm than good is done by much so-called recreation in Shanghai. Exercise is overdone. The man who dines out and is up next morning at five for his ride and busy all the rest of the day, is a good example of the strenuous life, but is not, as a rule, destined for old age, and, if he be alcoholic, soon falls a prey to disease.

THE SCIENTIFIC USE OF THE IMAGINATION.

In medicine, as in pure science, the best results are probably obtained by the scientific use of the imagination. Every case for diagnosis is an original research. Osler has said that a teacher's life should have three periods—study until twenty-five, investigation until forty, profession until sixty, at which time he should retire on double pay. The mental endowment which enabled Lister to see the vast bearings on surgery of Pasteur's discoveries, appears to be of the same kind as the philosophical genius of Newton or Darwin. Each possessed the faculty of extracting the essential thing from a mass of detail and that power of appreciation of true analogy which, according to Lao-tze, is responsible for every successful hypothesis. One hears the use of hypothesis decried and is told that one should collect facts without preconceived ideas. The great mass of clinical record may be laboriously useful, but unless made for the purpose of proving some principle, would appear to be of little permanent value. For really important contributions to science, medical or other, lengthy experience and highly technical training are probably required much less than a peculiar cast of mind—the instinct for detecting correlation in natural phenomena and the resulting power of devising a plan of investigation, which shall elucidate matters with the minimum cost in time and labour. Thus did Faraday make the most extensive additions to knowledge without passing beyond common arithmetic and Pasteur successfully investigated silkworm disease, although dependent at first on others for elementary instruction in his subject.
It may be allowed therefore that the faculty of generalising originally and correctly is a sign of the highest philosophical power. This rare reconstructing power or sympathy with the inner meaning of nature is necessary for the designing of the best form of research. As Aristotle puts it, the starting point or principle is more than half the whole matter. Darwin said that the man who was not an active theoriser would make an indifferent observer. The two faculties are bound up together. Let us therefore when wanting inspiration during our daily work contemplate the lives of men like Pasteur and Lister

"Whose thoughts, like bars of sunshine in shut rooms
'Mid gloom, all glory—win the world to light."

NOTES ON CASES OF SYMMETRICAL GANGRENE.

By ARTHUR F. COLE, M.R.C.S., L.R.C.P., Ningpo.

The presence of three cases of symmetrical gangrene in one's wards simultaneously without any demonstrable cause, affords the opportunity of comparing the features of each; in only the one case was the patient under observation from the onset, and in this case (that of a boy of 14) the clinical history and photographs seem to point to the disease first accurately described by Raynaud.

CASE 1.—Me-ts'ing, aged five, female. Brought to hospital with gangrene of both feet; from toes to metatarso-tarsal joint dead black colour, with nothing more than slight oedema about this level, and no inflammatory reaction except slight temperature. Feet had not begun to be 'bound;' special enquiry eliciting this fact. She had had an attack of "song-'ae bing" previously. Double Lisfranc's amputation performed, and recovery uneventful.

CASE 2.—Dzing Yiang-kwe, aged 35, native of Gyiang-saen, Chekiang, male; is an actor, unmarried. No history of exposure or of accident; said to have been well fed. No evidence of syphilis; looks a hearty man.

Admitted for gangrene of portion of left little toe and of right foot up to the region of the metatarso-tarsal articulation, for which Lisfranc's operation was done; history of "song-'ae bing" two months before coming to hospital, lasting one month with irregular fever of moderate degree; at the time of this illness he stated that he had no cough, but great loss of strength and wasting; his urine had been highly coloured, but not 'blood red.'
He states that two weeks after commencement of this illness both feet became numbed and very cold up to the ankles. At the end of the four weeks he says he took off his socks for the first time since his illness began, and found his toes black and adherent, his heels were also cold and black, and the feet were cold to the middle of the dorsum. Five days later sensations were normal and one month later he came to the hospital; at operation surprisingly little bleeding and secondary hæmorrhage the following day, necessitating opening up wound and re-dressing. Subsequent recovery uneventful.

CASE 3.—Tsông Teng-ying, aged 14, Ningpo school boy of a well-to-do family, with no history of exposure or accident, and food always of good quality; rather thin in appearance.

On admission May 23rd, 1908, he gave the history of one week's "fever" with no special symptoms. Early in the morning he noticed that both his feet were blue and cold, and within a few hours he was in the hospital. **Condition.**—Bilateral symmetrical blueness of all toes and of half of each dorsum pedis; both heels also blue and connecting area of duskeness up each calf posteriorly, a few scattered spots in front of each mid-tibial region and in front of each patella. Fingers unaffected; subcutaneous haemorrhages under each eye; the helix of each ear is blue; there is some anaesthesia and also tingling and burning sensations in toes. Temperature 100.5° F., pulse 130. Posterior tibial and dorsalis pedis arteries still pulsating. Urine Sp. Gr. 1020; no hæmoglobinuria, or albumen in, any form. Bowels not open for three days. Coughing and bringing up sputum; no tubercle bacilli demonstrated; increased breath sounds at right base of lung.

**May 26th.**—The toes are jet black and shrivelling; fresh crop of subcutaneous hæmorrhages on tip of each shoulder, over malar eminences, and an increase in the area over each patella and ear. Temperature varies between 102.5° and 104.5° F. and perspirations day and night.

**June 1st.**—Early this morning another attack; very sudden onset whilst in bed. All the old areas show increased asphyxia; that of the legs extending (as seen in illustration) to the middle of the calf; rather higher on the left side. At the frontier between the newly and the previously attacked areas there is a rampart of bullæ; sensation much diminished above and totally absent in lower portion; feels very cold everywhere in affected area. Sense of pain acute; chin and both lips now commencing to become gangrenous. Temperatures and perspirations continue.
SYMMENTRICAL GANGRENE.
Condition on May 23rd, 1908.
Notes on Cases of Symmetrical Gangrene.

June 2nd.—Ears are showing superficial gangrene more marked, likewise the prepatellar patches which have a slight inflammatory areola about them. Blood films show a double infection of tertian malaria. Temperature of skin of asphyxiated portion, 23° Cent.; normal skin, 34° Cent., and in the mouth, 38° Cent.

Ophthalmoscopically the veins on the disc appear enormous width, compared with arteries which look thread like; peripherally veins seem more normal.

June 4th.—The result of quinine sulphate, grs. v. t. d. s., is that no malarial parasites can now be seen in the peripheral blood. There is no bleeding or sensation when needle pierces the calf tissues; there is a slight exudation of serum; hyperæsthesia at healthy margin; popliteal artery still felt; small new area of gangrene at each elbow tip.

June 9th.—The lower lip has separated, measuring 1⅓" × ½". No bleeding whatever; saliva dripping out of mouth in consequence.

June 20th.—Both lower portions of legs completely separated, exposing bones. Cough troublesome, but no definite signs of lung disease. Double amputation performed and good recovery made, though without primary union. Since taking quinine, grs. v. t. d. s., only a small very superficial area on each elbow has been affected, and separation has taken place naturally of all parts attacked. Quinine still ordered daily during convalescence; cough and perspirations and all symptoms subsiding.

These three cases cannot but make one wonder whether the same or different causes were acting; the ages were so different, and from the history one can only grasp the fact that some severe illness preceded the actual gangrene in the first two cases, whilst the fact remains that the last was certainly complicated with a double infection of tertian malaria.

Very careful questioning failed to reveal any history of diseased grain; ergotism proper could certainly be excluded. There was no evidence of cardiac disease in any of the three cases, and no signs of senile endarteritis or syphilitic disease elsewhere. Diabetes can be passed by. The weather was very warm, and there could have been nothing of the nature of exposure.

One is left with the conviction that some toxic agent acting directly upon the nerve supply of the arterioles caused the tonic contraction of the involuntary muscle and so starved the tissues to death; after amputation the anterior and posterior tibial arteries were hardened and sections made, but the evidence gained was inconclusive. The fact
that there were successive exacerbations after coming into hospital, is not by any means against the toxic theory; for example, under the best conditions the diphtheritic toxins can subsequently cause successive paralyses, even after the local lesion has been cured. That there are vegetable toxic agents, of which we know very little except that gangrene may be the result, is shown by a letter from Dr. McFadyen in the C. M. Journal, July, 1908. But of such we had no suggestion in any of these three. In the last everything seems to indicate that the toxic agent was generalized, for with the remarkable exception of the hands, most parts of the body were symmetrically affected.

Whether the process would have resulted in the lad's death, had not the blood been examined and tertian parasites (small and full grown) found, we cannot say, but the improvements seem to date from the commencement of taking quinine sulphate; up to that time the considerable variety of drugs used, were for the relief of symptoms only; the local treatment of the limbs was to keep them wrapped up in wool, hoping for recovery.

Very little emphasis has been laid on the absence of what is often associated with Raynaud's disease, viz., haemoglobinuria. But it gives food for thought when one realizes the possible analogy between Raynaud's disease with or without paroxysmal haemoglobinuria and malaria on the one hand; and on the other, malarial patients in whom the ingestion of quinine or the presence of some (at present) unknown causative factor, can set up haemoglobinuria. In the case of this lad, it would seem that in some way the malarial parasites were connected with the course of his illness. Whether some day we shall learn the relation of the exciting cause of Raynaud's disease to that of Blackwater fever, may depend upon our ability to read aright and to interpret the meaning of such cases as those just mentioned.

THE BACTERIOLOGY OF SYPHILIS.

By Dr. Henry S. Houghton, Wuhu.

A subject so large as even the bacteriologist's field in syphilis can be only epitomised with the utmost brevity in such a paper as this. A history of the apparently futile efforts of years to make clear the causal organism would fill volumes, and I shall not touch upon the work done in all those years, from the early seventies to the late nineties, work the results of which, though it was patiently and carefully carried out,
failed again and again to stand the tests of the observations of the army of trained experimenters, whose place it is to bring the evidence of thousands of clinical and experimental tests to bear on the suggestions of their fellow-workers. The only valid fruit of these years of ardent effort is the series of inoculation experiments done by Neisser and his associates. Their work showed the transmissibility of the virus of syphilis to the higher apes and monkeys; the characteristic features of the infection becoming less marked as the anthropoid type was departed from; the lower orders—the lemurs and baboons—failed to give any marked reaction, and the more common laboratory animals are, of course, wholly immune.

In 1902 Bordet and Gengou described certain exceedingly delicate spiral forms which they had found in a certain percentage of initial sores and mucous plaques of the throat, but did not ascribe to them any etiological significance, as their findings were variable.

In 1904 a great deal of interest was aroused by the work of Sigel, who described what he called the Cytorrhycetes luis, and contended that the body, presumably a protozoon, was the long-sought factor. Schaudinn of Berlin, following Sigel's work, and endeavoring to confirm his findings, making use of an azur-eosin blood stain, found constantly in the lesions of active syphilis an exceedingly tenuous spiral organism showing the following distinctive characters:

1. It must be a relatively long organism with numerous (10-26) deep, regular spirals.
2. It must be of great tenuity.
3. It must react feebly to stains.
4. It stains pink with the Giemsa method; all other forms being purplish.
5. It has tapering and pointed ends.

(a) To this is to be added that the pallidum is a flagellate organism, possessing no other locomotory apparatus, while other common forms (Sp. ulcus carcinomatosis, Sp. dentium, plicatalis, etc.) are non-flagellate, but possess a perfectly definite undulating membrane.

Having submitted his preparations to Hofmann, the eminent protozoologist, and having Hofmann's opinion that the forms seen were organisms, probably protozoon and not artefacts, Schaudinn published (b) a cautious statement of his findings, not committing himself to the assertion of their specificity. To this organism he gave the name Spirochaete pallida, but the International Nomenclature Committee have settled on the name Treponema pallidum, of the order Trypanosoma, in order to distinguish it clearly from non-related bacterial forms bearing the name Spirochæte.
The work thus begun was at once taken up and vigorously carried on in practically every civilised country and by thousands of interested observers. The literature at present available is colossal.

The organism described by Schaudinn has gradually come to be accepted as the specific cause of lues, in spite of its failure fully to meet Koch's postulates. While perhaps it cannot with scientific accuracy be said to be the causative organism, the mass of evidence, even though indirect, is so overwhelming as to justify the deduction.

The evidence can, in brief, be classified under three heads:

1. The local findings in undoubted human syphilis.
2. Confirmatory experimental work.
3. Certain pathological considerations.

1. With the greatly improved technique which has been a natural accompaniment of intense investigation, it has been shown that Schaudinn's organism is constantly present in specific chancres, in enlarged glands of the first and second stages, in the secondary rashes and mucous patches. With careful centrifugalisation in a certain small percentage of cases they have been shown undoubtedly to be in the circulating blood. They are not found with regularity in tertiary manifestations. In the whole class of parasyphilitic affections the organism has not, to my knowledge, been shown to be present. It is in congenital and early hereditary lues that the richest growth of the Treponema is found.

2. On the purely experimental side, Schaudinn's work was quickly tested by Neisser, Metchnikoff, and others, and it has been conclusively shown that experimental syphilis in higher monkeys gives a picture identical with that in human beings, not only pathologically, as Neisser showed twenty years ago, but bacteriologically as well. This work was done almost simultaneously in France, Germany, England and in America, and published in great detail.

The most elaborate trials of cultivation were undertaken by numerous investigators, but for a long time altogether with negative results; either the cultures were wholly overgrown with extraneous and contaminating organisms, or remained perfectly sterile. Having in mind the brilliant successes of Novy and Knapp in cultivating various spirochaetal forms, many attempts at growing the Treponema were made, following their technique of collodion capsules planted intraperitoneally into various laboratory animals, but without brilliant results for a long time.

These researches of Novy and Knapp, Levaditi, and Mühlen and Hartmann, showed, however, that although beset with certain
technical difficulties the artificial culture of spirochaetes is not impossible; and a comparatively recent communication by Levaditi and McIntosh (g) announces that they have succeeded in growing cultures from inoculation material known to contain the Treponema pallidum which, though not pure, show tremendous numbers of a spiral form not to be distinguished either in morphology or in staining reaction from the Treponema. This fact easily sets it apart from spirochetal types which, though commonly found as saprophytes about the body, can readily be distinguished by their configuration and the ease with which they take up pigments. The only organism with which the Treponema is likely to be confused is the Spirochaete partenuis, described by Castellani (h) as peculiar to yaws.

Their procedure consisted in seeding a thin collodion capsule with material scraped from the primary lesion of a Macacus rhesus or cynomolgus (which had been originally inoculated from a human source.) The medium in the capsule was human serum, previously heated to 60° C. After scaling they were placed in the peritoneal cavity of a monkey of one of the above mentioned species. At the same time the animal was inoculated on the brow; the succeeding chancre serving as an index of the proper time to examine the intraperitoneal cell. They found, after about a month of incubation, the capsule filled with a cloudy fluid containing enormous numbers of the typical spirals, together with contaminating forms. After twelve passages, in spite of progressive dilution, the last cultures were more rich than the first, proving undoubted growth. After successive generations grown in monkeys, cultures may be raised in rabbits. First plantings into rabbits have been uniformly negative.

3. Levaditi (i), following the earlier work of Bondi and Simonelli, and Volpino (j), has made a careful study of several new-born syphilitic infants, and a macerated foetus, which throws some light on the relation of the specific germ to the constant pathological changes. The organisms, by the use of a modified Nissl silver impregnation technique, were found in vast numbers in the liver, lungs, suprarenals and skin. The finding of them in such numbers in a macerated foetus disproves the assumption that the Treponema might be the agent of a secondary infection. The localisation suggests the possibility of an inherited syphilis of essentially a visceral type, or the visceral infection may precede the external expression. The organisms do not, apparently, linger long in the blood-stream, but multiply in the vessel walls and pass thence into the cells of the parenchyma and connective tissue. They are able to penetrate into the relatively intact protoplasm of
certain epithelial elements, such as the cells of the liver, kidney and adrenal bodies.

The course of the inflammatory reaction in syphilitic lesions is thus made clear, for following the path of the organism appear, in order, endarteritis, periarteritis, mononuclear infiltration of connective tissues, and degeneration of parenchymatous elements, the classic picture of luetic cellular reaction.

Preparations technique.—A constantly improving technique has made what was once an exceedingly difficult procedure into a comparatively simple manipulation, well adapted to routine work, especially for diagnosis in dubious cases. One has a choice of almost innumerable staining methods, most of which are easy and satisfactory. There are, however, a few general rules which should be borne in mind:—

1st. All instruments and slides must be scrupulously clean.
2nd. Use no mercurial washes on the sore as a means of preparation, but if necessary clean with sterile water.
3rd. Scarify gently with a knife or curette the chancre or mucous patch and allow the blood to well up; pause a few moments until the serum separates. With a loop place a drop on a slip or slide and make the smear as thin as possible.
4th. Fix in alcohol, preferably absolute methyl.
5th. Stain.
6th. Flood with distilled water and dry in air.

Permanent mounts are best made in Damar balsam.

The stain which in my experience gives the most brilliant results, is one proposed by Goldhorn (k) as follows:—

One gram of lithium carbonate is dissolved in 200 c.c. of water and two grams of medicinal methylene blue added. When fully dissolved, heat on a water-bath until a rich polychrome has formed. Filter through cotton. One half is then carefully acidified with 5 per cent. acetic acid until blue litmus paper gives a faint reddish tinge. The second half is then added, and into this corrected polychrome a weak watery solution of eosin, about 5 per cent., is poured until complete precipitation has taken place. This point is determined by filtering from time to time until the filtrate is of a pale blue watery color and slightly fluorescent. The mixture is set aside for a day, and is then filtered through a double layer of filter-paper. The preparation is dried slowly at about 40° C., and when completely dried, is taken up in absolute methyl alcohol, making a strong solution, which is allowed to stand a day, and again filtered.

Technique.—The unfixed smear is covered with a sufficient quantity. After two or three seconds it is poured off and the slide introduced into clean water, butter side down. When washed, drain and dry in
UNTREATED FRACTURE OF FEMUR.
UNTREATED FRACTURE OF FEMUR.

By W. E. PLUMMER, M.R.C.S., L.R.C.P.

This case was of interest as showing the extreme deformity, largely due to lack of treatment, which may follow a fracture of the femur.

History.—Two years before admission the patient, a young man, aged 30, was injured by a bullet, which entered the front of the thigh and emerged at the back. He lay on his back for one year after the accident.

On Admission.—The general position and appearance of the left leg is shown in the photos; there are six inches of shortening, and the circumference, as can be seen, is greater than on the sound side. About the middle of the thigh, in front and behind, are sinuses caused by the bullet; probes passed by each opening meet in the middle, and bare but not loose bone can be felt.

The bone has firmly united by the aid of a large mass of callus. There is almost complete ankylosis of the hip and knee joints, probably due to lack of movement while the patient was lying in bed. The patient says the skin of the leg below the injury feels numb; it is shiny, and in places there are scales of adherent epidermis. The toes can be slightly flexed, but no extension whatever can be obtained, and the foot cannot be moved out of the "dropped" position. The leg and the wound are somewhat painful, and there is a little oedema; both symptoms are more or less relieved by lying down.
The patient said his leg was absolutely useless, painful, and the discharge from the sinuses was unpleasant; he was very anxious to have something done, but the only thing I could suggest was amputation, so the young man has gone home to think the matter over.

Would any other form of treatment be as satisfactory?

THREE CASES OF INFECTION BY SCHISTOSOMUM JAPONICUM.


Early in November, 1907, a patient presented himself in my consulting-room, complaining of symptoms of severe dyspepsia. Having only time for a cursory examination, I prescribed a Bismuth mixture, and, as he had come a long distance, and specially wished it, admitted him as a hospital in-patient.

I did not see the patient again till the next day. On going to his bedside and turning down the bed-clothes, I was surprised to find the abdomen very much distended, evidently with ascitic fluid. Palpation and percussion quickly confirmed the diagnosis of ascites; fluctuation being readily elicited. The ascites, combined with his gastric symptoms, suggested some obstruction to the venous return through the liver. Though the patient admitted a fairly free indulgence in the native wine (of the weak kind made from rice), on questioning him closely no very pronounced alcoholic history could be determined. A peri-vascular cirrhosis of the organ, due to alcoholism, seemed therefore to be hardly tenable. Was there any other cause, which, in this patient, could account for a cirrhosis of the liver? I bethought myself of the Trematodes, and took an early opportunity of microscopically examining his stools. A slide, prepared in the ordinary way and put under a 35" objective, at once cleared up the diagnosis, for it revealed numerous eggs of a kind that I had not previously seen, but which, from the characters presented, I assumed must be those of Schistosomum japonicum. This opinion has since been corroborated by others. I will, however, refer to this egg later on.

On looking up the volume specially devoted to tropical diseases in Allbutt's System of Medicine, which has recently come out, I find very little on the subject, and, in regard to the symptoms caused by the Trematode, Schistosomum japonicum, there is but one sentence which describes the affection as, "A strange endemic disease, characterised by enlargement of the liver and spleen, cachexia, ascites, and diarrhoea
with a discharge of mucus and blood." It seemed to me therefore, to be worth while to try and work out a little more fully the symptoms caused by the parasite as I found them in my patient.

PERSONAL HISTORY AND COMPLAINT.

The patient is a raftsman from Peh-shui (白水), a small town on the Siang River, Southern Hunan. Age 32. He states that about the age of 20 he began his life as a raftsman. The life of a Chinese raftsman is worth considering for a moment. A great deal of timber is grown in the south of the Hunan Province. The trees are felled in the forests and then dragged to the river side, where they are made up into rafts and so floated down stream. These are taken for long distances, not only down the Siang River, but also into and down the Yang-tse-kiang to Hankow, and even to such distant places as Nanking. Mat-huts are built on these timber rafts, and in these the men live (often for months at a stretch) until they reach their destination, when the rafts are broken up and the timber sold. From the foregoing it will be readily understood how constantly the men must be in the water. In the warm weather, with very little clothing on, they may frequently be seen piloting their unwieldy charge down stream; their bare legs being constantly in the water. Not infrequently a raft will stick on a sand-bank; then all hands must turn out to get her off again; the process frequently involving many hours' labour up to the waist in water. I have made the foregoing remarks because I believe that this kind of life is a powerful factor to be reckoned with in considering the etiology of this disease.

The patient states that for the first seven years of his life on rafts he enjoyed excellent health, and was always active and energetic, and indeed he shows indications of a once vigorous and muscular frame. He says that his illness started five years ago, that is, when he was 27 years of age, after a big storm in the Tung-ting lake. On that occasion the raft was much broken up by the violence of the storm, and he and his companions had to cling to the timbers for their lives. After the storm the men had to spend 3 or 4 days in the water, rebinding the timbers and so repairing the raft. It was immediately following on this that he had what he calls "an attack of malaria," lasting 2 days, with rigors and fever. After the "malaria" no motion was passed for 4 or 5 days, and there was suppression of urine. He had great pain in the liver region. He then took some native medicine, which made the bowels act, and the pain in the right side disappeared. The patient then appears to have had a dysenteric attack,
which lasted for a fortnight, with much straining and the passage of mucus and blood. When the bowel trouble subsided he took some native medicine, which was intended to act as a tonic, and "strong wine" for some 14 days, after which he noticed that his abdomen was enlarging. The abdomen, he says, became quite big in a few days. From that time up to the present it has been enlarged; sometimes a little smaller, when he has felt better, but usually about the same. Concurrently with the abdominal swelling he began to suffer very much from dyspeptic symptoms. After taking food "it would not go down," and it caused him great discomfort. Latterly he has vomited sometimes after meals, especially if he has taken too much. The stomach trouble has persisted throughout his illness, 5 years. Some 18 months ago he noticed that there was a gradually enlarging lump on his left side (spleen), and this has steadily increased in size ever since. He also began to notice a swelling more to the right side (liver). He complains that all through the last 5 years he has suffered from extreme weakness, listlessness, disinclination to do anything, a constant desire to lie down and rest. Ever since beginning of illness he has been troubled with an irregular diarrhoea, and has frequently noticed a little blood in his stools.

**Family history** is good. Both parents over 70 and well. No other members of his family suffer from this disease.

**Present condition.**—The face often wears an anxious worried look. Nutrition not good. Has lost flesh very much, specially during the last year. Sleeps very badly; being particularly restless and uncomfortable in the early hours of the morning. Temperature subnormal in the day time. Taken at 11 a.m. it was found to be 97.2° F.

**Digestion.**—The tongue is fairly clean and the teeth good. The patient states: "My appetite is good, but the food is not digested." He complains of great discomfort and fullness after meals, with eructation of wind, and not infrequently vomiting.

**Bowels.**—Very irregular, but usually there is diarrhoea, with 2 or 3 motions in the day. Does not complain of any abdominal pain.

The stools vary somewhat in appearance and consistence, but usually they are copious, brown, not frothy, sour-smelling, and showing here and there streaks of blood-stained mucus. The bulk of the stool is made up of indigested rice and vegetables. Microscopic examination of the faeces was made many times, and revealed ova of *Trichocephalus dispar*, a solitary egg of *Ankylostomum duodenale* and numerous eggs of *Schistosomum japonicum*. 
PATIENT NO. 2.
Liver.—Examination of the liver showed the organ to be much enlarged; the lower border presenting a bulging or rounded outline, and being a hand's breadth below the xiphisternum in the mid-line. In the photo, the lower border is outlined twice, the upper line showing the limit of the organ when the patient was lying down, and the lower representing the same when he was standing up. On palpation the surface of the liver felt smooth. There was no tenderness (except perhaps on deep pressure). No jaundice.

Spleen.—Very readily palpable, being much enlarged and extending a hand's breadth beyond the border of the costal cartilages. The surface felt smooth. No tenderness. Between the liver and spleen a deep sulcus could be felt, into which one could dip the fingers, thus separating the organs the one from the other. [See photo. No. 1.]

Abdomen.—Much distended with ascitic fluid, which gravitates to one side or the other as the patient changes his position. Fluctuation elicited. Dull on percussion. No abdominal pain or tenderness complained of. 36" circumference.

Vascular system.—Pulse regular. Arterial walls in good condition. Heart sounds good.

Respiratory system.—No cough. Nothing abnormal.

Nervous system.—Intelligence good. Sleeps badly, especially in the early mornings. Says he cannot sleep after cock-crow, but is restless and uncomfortable. In the day time feels very weak, and wants to rest always. No power for ordinary work. Walks slowly, and is listless and languid. Muscles wasted. Patellar reflex not readily elicited.

Urinary system.—No bladder symptoms whatever. Urine contained no albumen, and appeared perfectly normal.

Blood.—The blood was carefully examined microscopically. No malarial parasites. A differential leucocyte count showed a marked degree of eosinophilia. The leucocyte count was as follows:

<table>
<thead>
<tr>
<th>Type of Leucocyte</th>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly-morpho nuclear leucocytes</td>
<td>...</td>
<td>52</td>
</tr>
<tr>
<td>Large mono-nuclear</td>
<td>...</td>
<td>12</td>
</tr>
<tr>
<td>Small mono-nuclear</td>
<td>...</td>
<td>24</td>
</tr>
<tr>
<td>Eosinophile</td>
<td>...</td>
<td>12</td>
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<td></td>
<td></td>
<td>100</td>
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</table>

Treatment.—The patient was treated symptomatically because of his ascites and dyspepsia. Appropriate anthelmintics were exhibited on finding the Ankylostome egg.
On December 12th, 1907, another patient, afflicted with the same trouble, presented himself. He was also a raftsman, aged 32, and came from the same place as patient No. 1. He had worked on the rafts since he was 20 years old.

**Patient's account of himself.**—Patient states that his trouble began about two years ago; really about April, 1906. He was in the pine forest above Yungchow ( Yayın 치우) felling trees with a gang, and had been at work about a month when he was taken ill. The illness began one night with rigor, which was followed by fever and sweating. This came regularly every day in the evening for about 8 days, when he was treated for malaria by a friend, who gave him a decoction from some very effective native herb, when, he states, the fever ceased. (Enquiries failed to discover the identity of the herb in question.) This was not his first attack of malaria; he had had it occasionally in previous years on rafts. His friend afterwards gave him a tonic, but he says that on taking this latter medicine his abdomen at once began to swell, and he began with much straining and pain to pass frequent mucoid stools, which sometimes contained a little blood. This condition of the bowels, sometimes very bad, sometimes better for a time, he had for about a year, when he seemed to get over it. Patient admits, however, that he still notices a little blood occasionally at the end of defecation. The abdominal enlargement has been present ever since the beginning of the disease, continuing much about the same size. About three months before coming into hospital, patient began to notice that every night, about midnight, he had a feverish attack. This begins with a rigor, followed by feverishness, and then some sweating which, however, is not marked. Patient states that, in a way, the fever is like his first attack of malaria, though much milder. But it is also different from his malaria, though he find it difficult to explain in what way it is different. He is quite sure it is not malaria.

In addition to the foregoing, patient says that he has wasted in flesh considerably since beginning of illness, and he feels very weak. On that account he cannot do any work at all; indeed has not attempted to do anything for a year. He gets breathless if he attempts anything, as walking up an incline.

Patient complains also of indigestion. If he takes too large a meal, or eats meat, lard, or anything out of his normal run, he is sure to have much discomfort, and it is on such occasions that he sometimes notices blood in the stools. His bowels are very irregular; sometimes
constipated, but usually he is troubled with a certain amount of diarrhoea.

**Condition as found on examination.**—Nutrition poor. Lost flesh much of late. Expression listless, and he shows very little interest in anything.

**Alimentary system.**—Tongue red, pointed, "strawberry" like. Appetite good, but digestion bad. Much gastric discomfort if he is not careful as to the quantity and quality of the food ingested, with flatulence, but no vomiting. The bowels also are much upset from any dietary indiscretion; there being colic, diarrhoea, and sometimes blood in the stools. The stools contain much undigested food. Microscopical examination of stools showed the ova of *S. japonicum* in abundance, also those of Ascaris, Trichocephalus, and Ankylostomum (these last very few).

**Liver.**—The right lobe of the liver very much enlarged, bulging downwards and to the left and extending more than a hand's breadth beyond the costal margin. [See photo. No. 2.] The organ distinctly tender, even painful on pressure. Surface, on the whole smooth, though a little lumpy here and there. No evidence of jaundice.

**Spleen.**—Tenderness on pressure in splenic region, but no evident enlargement.

**Abdomen.**—Distended and globular, due to accummulation of ascitic fluid, as evidenced by fluctuation. No abdominal pain.

**Vascular and respiratory systems.**—Nothing noteworthy.

**Nervous system.**—Intelligence good, but patient disinclined for any mental effort. General weakness. Unfit for work of any kind. Patellar reflex sluggish. Sleeps badly. Can sleep usually up to about midnight, when he is awakened by his fever fit coming on. When the attack comes, he cannot lie still, but is so uncomfortable that he has to get up and sit on the bed. This lasts several hours, when he begins to feel somewhat better, and can then lie down and sleep again. Always lies on his side; cannot lie on his back with any comfort.

**Urinary system.**—No bladder symptoms at all. The urine for a few days became very thick with urates. Acid. No albumen. No blood.

**Blood.**—Owing to the nightly attacks of fever, blood films were taken, stained by Leishman's method and examined for malarial parasites. None were found. There was, however, a decided increase in the large mononuclear leucocytes. A differential enumeration of the leucocytes showed an even more marked degree of eosinophilia.
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than in Case No. 1; the eosinophile cells reaching 16.5 per cent. The first count was corroborated by a second, and the following table gives the results:

<table>
<thead>
<tr>
<th>1st Count of 300 Leucocytes</th>
<th>2nd Count of 300 Leucocytes</th>
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<tbody>
<tr>
<td>Poly-morpho-nuclear L.</td>
<td>Poly-morpho-nuclear L.</td>
</tr>
<tr>
<td>Large mono-nuclear L.</td>
<td>Large mono-nuclear L.</td>
</tr>
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<td>Small mono-nuclear L.</td>
<td>Small mono-nuclear L.</td>
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<td>Eosinophile L.</td>
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<td>61 per cent.</td>
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<td>15 &quot;</td>
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<td>7.5 &quot;</td>
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<td>100 per cent.</td>
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As the infection by ank. duodenale was slight, judging from the scarcity of the ova encountered, one feels confident that this pronounced eosinophilia must, in the main, be due to the S. japonicum. The same remark applies to the other cases also.

**Treatment.**—After microscopic examination of the stools, santonin was given in the usual way, and many ascarides expelled. Later, on finding an egg or two of a duodenale, patient was given Eucalyptus oil m. xxx, with chloroform m. xlv, and castor oil dr. x. Though the stools were carefully sieved, no ankylostomes were found. The stools themselves were prodigious in amount, and contained quantities of rice grains, vegetable fibres, and other undigested food stuffs, and also some blood-tinged mucus. A day or two later three 20-grain doses of thymol were given, but no worms were discovered.

Patient complained much of the night fever. On December 25th he was put on a cinchonidine mixture, but this had no effect whatever on the fever. It was evident then that the fever was not due to malaria, (1) because the microscopic evidence was negative and (2) because the fever did not yield to quinine. The patient's temperature when taken about 11 or 11.30 p.m. was usually about 101°F. Patient left the hospital about New Year's time, but he returned on the 23rd of February, 1908, for further treatment. His chief trouble was the night fever attacks. He said the cold fit was slight, but there came a long spell of fever with much restlessness and great discomfort. Towards morning he sweated and fell asleep. The temperature taken again at night was always found up to 101 or nearly 102°F. He was again put on cinchonidine, but, as before, without any effect on the temperature.

As in case No. 1 the diuretic mixture considerably reduced the ascites and relieved the patient. A bismuth mixture was of some little use for the dyspepsia, but one feels that such treatment is purely symptomatic.
It is difficult to conceive how the worm could be dislodged. Its main habitat is evidently the liver, as evidenced by the enlargement and tenderness of this organ and by the backward pressure symptoms, ascites, chronic venous congestion, etc., presumably due to a peri-vascular cirrhosis of the liver, the result of the irritating presence of the parasite.

PATIENT NO. 3.

Admitted January 6, 1908. Also a raftsman, and comes from the same place as the other two. He has worked on the rafts for over twenty years, having, like the other two, started at the age of 20, and is now 41.

The patient states that his illness began with an attack of malaria 6 years ago. He owns that he had had malaria before, but he reckons that this particular attack marked the commencement of his present illness. The malaria was of tertian type, and lasted for two months.

When he had got over this he had diarrhoea, going to stool 5 or 6 times daily. Mucus and blood were frequently present in his stools, but there was very little pain or straining. This condition of the bowels kept on for 4 years, and he always felt extremely weak and disinclined for work, but he does not complain of any other symptoms during this time, and he managed to go on with his work. Patient states that about 18 months ago his bowel trouble cleared up somewhat, but there followed another spell of fever for about 20 days (malarial ?). From that time his bowels have been irregular, generally loose, and frequently containing mucus and blood. Gastric symptoms do not, as a rule, trouble him much, though apt to be brought on if he is not careful about his diet. Sleep has been bad of late.


Alimentary system.—Appetite good, but has to be careful about his diet. Bowels very variable and irregular, but usually loose. (Several evacuations daily.) Copious, containing much undigested food and frequently blood-stained mucus. No pain on straining. The microscope revealed ova of Ascaris, Trichocephalus, Ankylostomum (a few), and S. japonicum.

Liver.—No enlargement, but distinct tenderness in left lobe. No jaundice.

Spleen.—No enlargement, or tenderness.

Abdomen.—No ascites, pain, or anything abnormal found.

Vascular system.—Heart, 1st sound feeble. Pulse of low tension, weak. Breathless on exertion.
The China Medical Journal.

Nervous system.—Intelligence fair. Complains of great muscular weakness. Finds walking difficult. Patellar reflex very sluggish.

Sleep.—Sleeps badly. Can sleep usually up to about mid-night, but after that he can get no rest. In the early dawn he feels very hot and feverish for about an hour. No rigor. When the fever is on he is very restless and cannot lie still, but gets up and sits on the bed, supporting his head on his hands. When the fever has subsided he sweats a little, and then he feels he can lie down, and perhaps get to sleep again.

Urinary system.—Nothing abnormal.

Blood.—A differential blood-count showed no increase in the percentage of the large mono-nuclear leucocytes as in the other two cases. 7 per cent. were of this variety. The eosinophiles were increased to 11.5 per cent.

Treatment.—Santonin and thymol for Ascaris and Ankylostomum. Otherwise symptomatic.

A SUMMARY OF THE SYMPTOMS.

As giving a clearer idea of the clinical picture presented by these patients, the points may conveniently be summed up as follows:—

1. History of "malaria" and subsequent attacks of "fever."
2. History of dysenteric attack with pain, straining, mucus and blood.
3. Abatement of dysenteric symptoms, but in their place an irregular diarrhoea with a little blood-stained mucus, but no pain or straining.
4. Macroscopic similarity in the nature of the stools, due to large amount of undigested food passed.
5. Microscopic evidence of infection by S. japonicum, from the finding of ova of same in the faeces.
6. Dyspeptic symptoms.
7. Ascites.
8. Enlargement of liver and spleen.
10. Listless, wearied expression of countenance.
11. Extreme weakness, lassitude, and disinclination (even inability) for physical or mental effort. Breathlessness on the least exertion. Sluggishness of patellar reflex.
12. Malnutrition (history of losing flesh).
13. Sleep much disturbed by nightly recurring fever and restlessness.
14. Temperature usually sub-normal, but rising to 101° F. or more during night fever attacks.
15. Marked eosinophilia.

THE PARASITE AND ITS OVUM.

The parasite, Schistosomum japonicum, was discovered by Kat-surada in April, 1904. He not only found the ova in the faeces of several cases under his care, but having noted that some Trematodes which infect man are sometimes to be found in the cats and dogs of the
endemic area, he carried his investigations further afield and found the worm itself in the portal and mesenteric veins of two cats, also eggs in the liver and walls of large intestine.

According to Katsurada the worm is smaller than its Egyptian cousin, S. haematobium (Bilharzia haemotobia). The body of the male worm is smooth and has no tubercles as in the better known older variety. It measures on an average about 10.5 mm. in length. The adult worm evidently takes up its abode in the small arteries and veins of the liver, mesentery, and gut generally. The eggs, passing out into the intestine, are readily found in large numbers in the faeces.

On first finding the egg, by a process of exclusion, one quickly arrives at the conclusion that it must be that of S. japonicum. It is evidently not one of the commoner varieties of ova met with in the stools (Ascaris, Trichocephalus., Ankylostomum, etc.). It is plainly not a Cestode egg. One is forced to the conclusion that it must be the egg of a Trematode. But one remembers that all the Trematode eggs are operculated, except those of the Schistosoma. Therefore as this egg is not operculated, it must be either S. haematobium or S. japonicum. That point, however, is decided at a glance, for the egg of S. haematobium is spiked, either terminally or laterally, and as in this egg we have no trace of a spine, but a perfectly clear smooth shell, we reach the conclusion that we are dealing with a case of infection by S. japonicum.

On the first occasion that I saw the ovum I had mounted a specimen of the faecal matter in a drop of plain water in the ordinary way. With a ¥2/3" objective one saw at once a number of large oval eggs with granular contents, unoperculated, unspiked, smooth, transparent, and showing clearly a double outline.

On returning to the specimen an hour or two after I had mounted it, and finding the water drying up from under the cover glass, I added another drop. Almost immediately after applying the drop of fresh water I found that the eggs began to hatch out. The shell simply ruptured and a free-swimming ciliated miracidium escaped, and by means of its cilia would swim gracefully across the field. The shape of the embryo, as I saw it, resembles somewhat that of Fasciola hepatica, but the papilla is not so sharp. This differs from the description given by Dr. Logan who, some time ago, found the parasite in Changteh
Logan describes the free-swimming embryo as being "melon-seed shaped," and drew it as here shown.

The egg in detail, ½6th" obj.

Using ½6th" obj. and a micrometer I carefully measured the egg a number of times and found that, though it varied considerably, the average size was .1 mm. long x .07 mm. broad. To prove that there was no fallacy in the measuring an Ankylostome egg was also measured by the same method, and the results found to tally with the dimensions given in the text-books for the ovum of that parasite. It was thus found that the egg of S. japonicum was often nearly twice that of A. duodenale. I mention this because the measurements given in the volume on Tropical Diseases in Allbutt's System do not correspond with what I found. In the few notes given on S. japonicum in the above volume the eggs are stated to be between 0.06 and 0.09 mm. in length and 0.03 to 0.05 mm. in breadth, which makes the egg to be only equal in length to the breadth of the ovum as I found it.

There is another difference. The eggs are described as having "a stout, smooth shell." Smooth certainly, but not stout. On the contrary, the shell is very thin and delicate and easily ruptures. In mounting specimens one has to exercise care not to exert any undue pressure on the cover-glass, or to slide it along the glass slip, otherwise the shells will be found broken.

When I considered the above differences, viz., the difference in the shape of the embryo, the difference in the size of the egg, and the difference in the nature of the shell, I began to wonder if I was really dealing with S. japonicum after all.

In order to clear up the doubt I sent specimens to Sir Patrick Manson and Dr. Daniels, of the London School of Tropical Medicine, and also to Drs. Logan and Booth in China. In due course the replies came to hand.

Dr. Booth wrote:—"I carefully examined your specimen, and it contains the ova of S. japonicum. Write me the notes for the Journal."
Dr. Logan wrote:—"I examined your specimen, but am sorry to say that the eggs had undergone such change that it was not possible to determine the finer points, owing to the development that had taken place. . . . The size of the egg is the same as we find here, I judge, without accurately measuring. . . . It may be you are on the track of a new species. I strongly suspect this is the case if your drawings and mine represent what we find. I have never seen the shape you mention, either inside or outside the egg shell."

Dr. Daniels wrote:—"I examined and found the eggs you describe, which contained a definite miracidium." Further on he says: "The clear egg, much about the same size as the Ankylostomum, with no operculum, no spine, and containing a miracidium, must be a Schistosomum, and if one of the known human ones, S. japonicum."

My difficulty is that this egg is not about the same size as the Ankylostomum, but nearly twice the size. I suspect the eggs, by the time they reached London, had shrunk and undergone considerable change."

Sir Patrick Manson wrote:—"I have examined the slides which you so kindly sent me with your letter of January 1st, and have very little doubt that beside A. lumbricoidus in one, and T. trichinum and A. duodenale in the other, they both contain eggs of Schistosomum japonicum. The size, shape, colour, ciliated embryo in a non-operculated shell all point to this. Of course it is difficult to be positive, but everything points to this diagnosis. The shape of the ciliated embryo goes for little, as their bodies are very plastic, and assume many forms according as to how they are travelling. If you would cultivate the embryos don't use an incubator. Put them in ordinary water, at ordinary summer temperature, and in moderate light, and change the water every 2 or 3 days."

This cleared up my difficulty in regard to the shape of the free miracidium, and I felt forced to conclude, in spite of the other points which do not tally with the standard description, that I was dealing with S. japonicum, especially so when, soon afterwards, I received a specimen from Dr. Logan containing eggs which, after examination, I found to be similar to those I had found.

As already stated the egg under 3/5 obj. is seen to be quite clear and not stained by the bile. It is oval, transparent, and shows a very clear double outline. When using the higher power (3/6 obj.) one sees at once that the double contour is due to the single clear outline of the egg itself (the egg-shell) on the outside, and within this, also quite clearly defined, the outline of the embryo. The embryo, evidently a living ciliated miracidium, occupies practically the whole
length of the egg, though at the sides there is some little space between the outline of the embryo and that of the shell. In this space more or less granular material is usually to be found. At what is evidently the head-end of the embryo a distinct papilla is always to be found. The internal structure cannot be made out very plainly, being granular and ill-defined. The head on papilla-end frequently shows lively twisting or wriggling movements; various subtle and indefinite changes are constantly going on in the protoplasm of the interior, and very fine molecular movements (something like dancing pigment in a malarial parasite) are frequently to be seen. As I carefully drew a number of these eggs, perhaps the drawings here given will give a truer idea of the appearances presented than any further description.

After seeing the free-swimming embryo for the first time, I regret that I had not further opportunities of studying it. The weather turned suddenly cold, and though I diligently used both warm-stage and incubator, I entirely failed in my endeavours to coax the embryos to hatch. When I next get the opportunity, I shall remember Manson's advice in regard to cultivating them.
INFECTION OF MAN.

In a person whose internal organs are invaded by this parasite, the eggs pass out in enormous numbers in the faeces. It seems tolerably certain, I think, that if the eggs do not reach water, the miracidium will not hatch out and the embryos will perish. Having reached water of summer temperature and hatched out, the only way in which one can conceive of the countless swarms of free-swimming active little creatures effecting an entrance into man, is through the skin. If taken into the stomach in drinking water, either directly or in some small mollusc or other intermediary host, the acidity of the gastric juice would doubtless be fatal to them. All three of my patients were raftsmen, men who were constantly in and out of the water, frequently standing in the mud for hours together with the water up to their waists, and thus exposing, for more or less lengthened periods, a large amount of skin surface to infection.

Looss has satisfactorily proved that the larvae of Ankylostomum duodenale can penetrate the skin, and that they frequently do so as the first step towards reaching the intestine. He also firmly believes that the Bilharzia miracidium gains an entrance into the human body by the same route. Arguing from analogy, therefore, as well as from the probabilities of the case, it seems to me pretty certain that the mode of infection of human body by the living embryos of S. japonicum, is also via the skin.

Having penetrated the skin, the embryos, carried first by the lymph and then by the blood-stream, will ultimately reach those organs for which they have a special predilection, notably the liver, spleen, intestine, and mesentery. Here the parasite makes its home and begins to grow steadily. It would appear that the small branches of the portal vein are chiefly invaded, but without very careful post mortem examination, it would be difficult to say exactly what structures are particularly affected.

It is easy to conceive how the irritating presence of this parasite in the venous radicals of the portal vein could set up a peri-vascular cirrhosis, with consequent obstruction to the portal circulation, chronic venous congestion of spleen, stomach, and intestines, and the whole train of backward pressure symptoms associated with a cirrhotic liver. Indeed the enlargement of the liver and spleen, the chronic gastric catarrh and dyspeptic symptoms, the irregular diarrhoea, the ascites, and general malnutrition can be directly traced to the cirrhotic condition of the liver, as the result of its infection by S. japonicum.
The remaining symptoms, the mucus and blood in the stools, the disturbed sleep and night-fever, the eosinophilia, and, of course, the presence of the ova in the faeces, one may regard as the more direct effects produced by the parasite itself.

Treatment must, as already stated, be mainly symptomatic. It is difficult to conceive how any line of treatment can possibly result in the expulsion of the worm. Intramuscular injections of atoxyl may possibly be productive of good results. It is impossible to say how long the parasite is capable of living, but, provided there is no fresh infection, one would expect that time might effect its own cure by the death of the worms, though doubtless the tissues would be left permanently damaged. The most important factor in treatment therefore would appear to be of a prophylactic nature—warning the patient of the source of infection and seeking to guard him from a fresh invasion by such unwelcome guests.

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A CASE OF HYDATIDIFORM MOLE.

By EMILIE BREITHAUER, M.D., Hanyang Hospital.

Patient aged thirty-three. Mother of six children, one of whom died a short time ago of phthisis. Patient herself has all the symptoms and the physical signs (including very rapid heart action) of pulmonary tuberculosis, as well as tubercle bacilli in the sputum.

Previous labors were all difficult, but not instrumental. No miscarriages, no history of syphilis.

History bearing on present condition is as follows:—

When she believed herself pregnant for two months there was a flow of blood from the uterus, which lasted four days. This the patient thought was menstruation and of no importance. Symptoms were quiescent for ten days, when another hemorrhage, though less severe, occurred. For the next forty days there was constant dribbling of blood. Then she came under my observation.

On examination I found the uterus extending up to the umbilicus and firm. It was longer than wide as in ordinary longitudinal presentation. Occasional contractions were taking place when the uterus became very hard; at other times it was a little softer than in normal pregnancy. On the right side small parts, which felt very much like arms, could be made out; these were very firm. The patient maintained that "she was able to feel the movements of the child several times a day." The abdomen was carefully and thoroughly
A Case of Ectopic Pregnancy.

palpated in search of the fetal head, but no body hard enough and large enough could be palpated. On listening for the fetal pulse there was a distinct heart beat, 130 to the minute, midway between the umbilicus and the anterior superior spine of the ilium on the left side. In spite of the hopeful signs, I gave the patient's relatives no hope for a living child. Neither did I advise emptying the uterus on account of the very low condition of the patient. On account of the contractions which were going on I expected a spontaneous expulsion of the uterine contents. During the few days in which the patient was under my observation I noticed that the discharge was sanguineous and not pure blood; the latter coming away only occasionally. During this time there were a few vigorous but painless contractions of the uterus, and two large blood clots were expelled, but nothing more. In just one week from the time in which I had first seen the patient I was called again as "expulsive pains" had come on. On arriving at the house the uterine contents had already been expelled. "Quickly, piece by piece, and with very little pain," the patient said. She herself was in a very low state, due probably altogether to the condition of her lungs, as the actual quantity of blood lost was very slight. At this time her temperature was 101.8°, her pulse 145. The uterus was well contracted and two inches below the umbilicus. Very little blood was coming away.

The expelled uterine contents consisted of a wash basin full of bunches of vesicles. Every bunch was carefully examined. There was a large bunch which still retained some likeness to placental tissue. Of the fetus there was absolutely no trace. The vesicles varied in size, from tiny pin head ones to those as large as grapes, which they very much resembled, but most of the vesicles were of the size of small white beans. The vesicles contained a very pale straw-colored fluid, and were translucent.

It would be interesting to know the frequency of this condition in China.

A CASE OF ECTOPIC PREGNANCY.

By W. H. Venable, M.D., Kashing.

On August 29th, 1907, I was consulted by Mrs. A., a missionary, for irregular uterine bleeding. Previous to this time menstruation had always been regular, and her regular menstrual period had occurred about two weeks previously. However on the date mentioned, or the day before, the flow began again. I immediately suspected ectopic pregnancy, but a
vaginal examination did not reveal anything definite. I prescribed rest and small doses of ergot. The flow decreased considerably, but did not stop entirely. In the next few weeks there were several attacks of rather sharp pain in the lower part of the abdomen, accompanied each time with a decided increase in the flow. There was no nausea, fullness of the breasts or any other of the early signs of pregnancy, but I still could not help feeling that I had a case of ectopic pregnancy to deal with. I could not find in any of my text-books a statement to the effect that the usual signs of pregnancy might be entirely absent in some cases of ectopic pregnancy, so I wrote to Dr. Shields, of Tung-hiang, and Dr. David Stuart, of Soochow, and asked them to consult what text-books they had in regard to the point in question and also to give their opinions on the case. Dr. Shields sent me the following quotation from Dudley's Gynecology: "The usual signs of pregnancy, such as pigmentation, morning sickness, and fullness of the breasts, may be present or absent. Frankenthal says that during the first eight weeks the ordinary subjective signs are absent."

Dr. Stuart, among other comments, made this statement: "The other symptoms of pregnancy, such as morning sickness, tenderness and swelling of breasts, discoloration, etc., etc., are not by any means constant; in fact my own experience has been they are never noticed before the second or third month."

From the history of the case both Dr. Shields and Dr. Stuart thought that the diagnosis of ectopic pregnancy was justifiable. One significant point in the history was that nearly four years had elapsed since the patient's last pregnancy. She has borne three children.

On September 28th, after a rather long walk, she had an unusually severe attack of abdominal pain and uterine bleeding. The next day I made a thorough examination under chloroform and had no difficulty in palpating a mass apparently about an inch in thickness behind and to the left of the uterus. A sound carefully passed, showed that the uterine axis was lying in the normal anterior position and the fundus could be plainly felt anteriorly, so the idea that the mass was the fundus of a retroflexed uterus could be precluded.

Drs. Shields and Stuart very kindly agreed to come and help me with the operation, which was done on October 1st. After the incision had been carried down through the muscles and fascia dark blood clots could be seen through the transparent peritoneum. After opening the peritoneum the abdomen was found to contain a considerable amount of dark blood and blood clots. The left Fallopian tube was distended with blood clots, and dark blood could be seen oozing from the fimbria-
ted extremity. The left ovary contained a cyst about the size of a walnut. It occupied nearly the entire ovary, so that very little ovarian tissue was left. The right ovary contained a cyst about half as large and occupying about half the ovary. The left tube and ovary were removed entire. The part of the right ovary containing the cyst was excised, leaving about half the ovary.*

The patient made a good recovery. She had never lost enough blood to affect her pulse perceptibly, nor at any time was her condition alarming. Among the blood clots in the tube nothing could be positively identified as a fetus, so I suppose it had become detached and disintegrated to the extent of being unrecognizable. Still I have no doubts as to the case being one of ectopic pregnancy, as I know of no other condition that could produce such a train of symptoms and such lesions.

Since the operation the patient has menstruated regularly, and so far I can see no bad results from leaving half the right ovary.

This case has impressed indelibly upon my mind the importance of the fact that the ordinary signs of pregnancy must not be looked for with certainty in attempting to diagnose a case of early ectopic pregnancy.

FILIGREE IMPLANTATION IN ABDOMINAL HERNIA PREVIOUSLY CONSIDERED INOPERABLE.

Review by R. T. Booth, M.B.

McGavin in the Lancet of November 23rd, 1907, says that he has used the method of filigree implantation with success. Among the cases four are important for several reasons. 1. Three were of the same variety, viz., hernia in the region of the appendix, two indeed resulting from appendicectomy. 2. All were incurable by any of the ordinary operations for ventral hernia, two of them being cases of recurrence, and having been considered by other surgeons as inoperable. 3. All were complicated with pain; in one case by paroxysmal colic, retching, or inability to perform the ordinary duties of life owing to the constant prolapse of the abdominal contents on the most trivial exertion. 4. Two of them required filigrees of such size as to constitute a record in the introduction of foreign bodies for curative purposes. We quote one of these four cases in order to show the method adopted. It sometimes happens that in China we come across severe cases of ventral hernia, which under ordinary circumstances we

* Note.—The patient has since become pregnant.
are not inclined to attempt to cure. A silver filigree, such as was used in these cases, could be easily made on the street by any silver worker.

CASE.—In 1904, a woman, aged 22, was admitted to Guy's Hospital under the care of Mr. W. Arbuthnot Lane, for gangrenous appendicitis and general suppurative peritonitis. The abdomen was opened over the appendix and in the middle line above the pubes. These wounds were left open for drainage, and were sutured four days later. A faecal fistula formed in the appendix wound. From the character of the excreta it appeared that the fistula was high up in the bowel, and the girl began to waste rapidly. Four attempts were made to close the fistula by suture without success. Finally enterectomy of six inches of the intestine and end to end anastomosis were performed.

Six months later she was again admitted for a large ventral hernia at the site of the appendix wound. The sac was excised and the abdominal muscles were approximated, but the gap appears to have been too great, for the hernia quickly reappeared and became larger than before. In this condition she came to McGavin. Her condition was as follows: A hernia of really gigantic proportions occupied a considerable part of the right lumbar, right inguinal, umbilical, hypogastric areas, and passing from two inches below the 10th rib obliquely downwards and inwards to an inch above the pubic spine. The gap measured seven and a half by four and a half inches. Coils of adherent bowel and peristalsies could be seen through the thinned out and pigmented cicatrix. The entire hand, placed flat upon the scar, could be passed straight into the abdomen. From time to time there were attacks of acute agonising pain in the abdomen, accompanied by sickness. The hernia was uncontrollable by any form of belt or truss. McGavin removed the entire cicatrix by an ellipse measuring 13 by 3 inches. As anticipated the peritoneal cavity was opened about the centre of the wound. The abdomen was opened again at the extreme upper limit of the wound. With a finger as a guide the peritoneum was laid open in the whole length, keeping to the umbilical side of the mass of adhesions which was glued to the right side of the incision. At the end of an hour the operator succeeded in separating by dissection the greater portion of the adhesions between the ileum, omentum colon, and abdominal wall, although much had to be left undone as unjustifiably dangerous. An attempt to strip the peritoneum from the posterior surface of the abdominal wall resulted in so much tearing that a large portion of it was rendered quite useless for the purpose of carrying a filigree; a gap measuring 3½ by 1½ remaining patent. As the omentum was not long enough to reach beyond the
Filigree Implantation in Abdominal Hernia.

Shaded portion in this diagram shows the area of hernial protrusion.

R.—Rectus muscle partly covered by A, representing oblique aponeurosis and ant. sheath rectus muscle.
E.—Ext. oblique muscle.
C.—Cæcum sutured on inner side to small intestine I and on outer side to peritoneum P.
P.—Conjoined peritoneum and post sheath of rectus muscle sutured to small intestine I.
Below C.—Portion of filigree shown in situ.

upper limit of the wound into which it might otherwise have been sutured, the operator chose the strongest loop of small intestine in the vicinity of the gap and drew it into the latter, suturing it on the outer side to the inner margin of the cæcum which was adherent to the peritoneum and on the inner side to the outer margin of the conjoined peritoneum and posterior sheath of the rectus muscle. Upon this patchwork of peritoneum, intestine, and fascia the filigree was placed; it measured 9 inches in length, 4 inches across the centre and 3 inches at each end. The filigree was covered by the atrophic rectus to the inner side and by the oblique muscles on the outer side. The frayed remains of the aponeurosis of the ext. oblique were united to the anterior sheath of the rectus muscle. The wound was closed by 40 Michels clips and four stout salmon-gut tension sutures. Convalescence was uninterrupted. Since the operation she has been free from discomfort. This case, as well as the others which we have not quoted, are good examples of a class hitherto regarded as beyond the power of surgery. It is advisable to place the filigree as close as possible to the abdominal cavity, but at times it is impossible to place it actually on the peritoneum. Firm adhesions often exist between this structure and the transversalis fascia in old standing umbilical hernia and in some cases of ventral hernia following operation or accident. The attempt to separate these adhesions in order to lay the filigree on the peritoneum results in tearing of holes in the latter and in troublesome and persistent oozing. Time is
lost, shock is increased, and suppuration is favoured. There are other situations in which filigrees may be implanted. In median hernia above the umbilicus, or in umbilical hernia and for two inches lower down than the umbilicus, the space between the rectus muscles and their posterior sheaths is admirably suited for the purpose. The separation of these structures is very simple; there is little oozing to endanger the union of the wound, and the bed so formed is firm and resistant. In hernia following appendicectomy or other operation through the lateral wall of the abdomen the difficulty of forming a bed for the filigree may be difficult. It will arise when there is deficiency of peritoneum with which to close the abdomen either from tearing of holes in the attempt to strip, or from cutting out of sutures where the tension is great. The difficulty may be met in three ways. 1. The omentum, if long enough and not widely adherent, may be sutured into the gap and the filigree laid on it. 2. When this is impossible the intestines themselves, if in good condition and especially if more or less adherent to one another, may be utilised. 3. When there is no lack of material, but the peritoneum is so closely adherent to the fascia of the abdomen as to be inseparable, an incision may be made along the margin of the attachment of the ext. oblique muscle to its aponeurosis, as shown in illustration. The portion internal to this incision is isolated from the remainder of the aponeurosis by carrying the upper and lower parts of the incision inwards towards the middle line. It will then be found that the peritoneum can be stripped away from the oblique muscles so that this peritoneal fascial strip can be made to meet the outer edge of the posterior sheath of the rectus muscle, which is probably also inseparable from its peritoneum. The filigree can now be laid on this bed, and with a little care the rectus muscle can now be drawn from its sheath and transplanted outwards so as to meet the edge of the external oblique muscle which has been laid bare by the divorce from its aponeurosis and which will serve to cover the outer loops of the filigree.

Silver wire No. 28 gauge is used in all filigrees, with 8 loops to the inch. The form of the filigree is as per illustration.
OBSERVATIONS MADE DURING FURLOUGH.

By O. T. LOGAN, M.D.

While visiting at Grady Hospital, Atlanta, Georgia, I saw a method for retaining soft rubber catheters that is at once simple and efficient. The drawing below will show that the method consists simply of fastening adhesive plaster strips to the back wire of two safety pins and then piercing the catheter on opposite sides and anchoring the strips to the sides of the penis and the groin. Circular strips of adhesive (applied loosely around the penis to prevent constriction should erection occur) hold down the strips that are fastened to the safety pin. I was told that it was the custom to leave catheters in the bladder as long as ten days at a time in cases of external and internal urethrotomies. By daily irrigation and the internal administration of urotropine both cystitis and incrustation of the catheter were prevented. The catheter should be inserted into the bladder as short a distance as possible for obvious reasons.

Hereafter I shall follow the plan of a surgeon I recently saw operate in dressing herniotomies. After the gauze of the dressing was applied, he covered an area considerably larger than the incision with overlapping strips of zinc oxide adhesive plaster. These strips were applied in different directions in such a way that they made it impossible for the dressing to slip the least bit, and also made infection from urine—the patient being a child—much less likely.

It is evident that aspirin has come to stay. Not only is it being used in Atlanta in cases where sodium salicylate was formerly given, but it is given in typhoid to reduce temperature and relieve nervous symptoms; small doses of two to five grains being sufficient. Combined
The China Medical Journal.

with the older antipyretics it is also used in migraine and neuralgia in
doses of five to fifteen grains.

In using aspirin in typhoid I am told that the beginning dose
should be only one or two grains, as it sometimes causes a fall of
temperature of six or seven degrees even when used in small doses.
My brother-in-law, himself a physician, is loud in his praise of aspirin
in typhoid, having himself experienced the good effects of this drug
during an attack of this disease.

RESEARCH COMMITTEE.

Second Interim Report, October, 1908.

We are in receipt of two more series of faecal examinations from
Dr. R. T. Booth, of Hankow, and the late Dr. George F. Stooke, of
Ichang. In the name of the Research Committee we would express
our sense of the loss to the Association in the removal of Dr. Stooke.
As a careful and painstaking observer and a clear writer, he would
have stood in the front rank of the Association's scientific men, a class
of men who can ill be spared by China at the present time.

In addition to these statistics we publish a letter from Dr. Cox, of
Rensheo, Szechuan.

A general review of the increase in our knowledge on the subjects
of our research may not be without interest.

Before we commenced this investigation we knew little more than
that round worm was ubiquitous through China, that tapeworm was
common in the north, that Ancylostomum was found in a few places
in the south, and that flukes had been discovered in the Ningpo
region.

Now, even after this short time of investigations, we have arrived
at the following results:

Ascaris.—Our views are confirmed about the ubiquity of the round
worm. From eight reports received from districts wide apart in China
and Korea we should gather that on an average about 75 per cent. of the
inhabitants are affected, say about 300 million out of China's reputed
400 million. Suppose we were to reduce this to the popular journalism
of the day and allow an average of ten worms for each infected
intestine we should have a number which, if placed in single file end to
end, would go round the earth more than ten times. For ourselves we
find it difficult to believe that so ubiquitous a worm, practically univer-
sally present in the intestines of children, is anything but a harmless
saprophyte. At any rate the Chinese people, the most numerous and perhaps the most fertile on the face of the globe, seems to suffer no national ill from the presence of this helminth.

*Trichocephalus dispar* is another parasite whose presence seems to give little trouble to its host. It is second in frequency to and as ubiquitous as *Ascaris*. But while common all over China it is probably not more so than in London. Ardent pathologists do from time to time try to put down appendicitis to this cause, but with that lack of the power to take a broad view which unfortunately characterises the ardent in most causes, they fail to recognise that the distribution of the worm and of the disease do not in the least correspond.

*Ankylostomum duodenale* with its American cousin *Necator americanum* are perhaps the worms most important at the present moment in reference to our research. It is becoming more and more evident that their distribution is as widespread, though not as universally infective, as the parasites we have just mentioned.

Here we are dealing with a worm whose toxicity is undoubted, though even in this case, strangely enough, the presence of the worm and the disease *Ankylostomiasis* are far from being synonymous terms. Many deaths, probably thousands every year, are caused by *Ankylostomiasis*; very many more are rendered chronic invalids by the disease, but still many, probably the majority of those harbouring the worms, do so while showing few if any symptoms of the disease, though in some of these cases the number of worms is very large. Could not some member or members consider this subject with a view to enlightening us on the point at our next meeting?

With regard to the treatment of the disease, Sir Patrick Manson has lately urged the use of B. naphthol in the place of the more poisonous thymol.

The dose is grs. xv, repeated every half-hour for three or four doses; the method of administration the same as that used for the more toxic drug. Will not some of our members give this drug a good trial and report the results?

One more remark while on the subject of this worm. We have so far had no reports of the presence of *Strongyloides* (Anguillula) *stercoralis*. It is difficult to believe that this parasite is absent from China, and indeed I know of its having been found in South China. It has to be remembered, however, that only the larval form is, as a rule, found in the faeces, and that this, except on very careful microscopic examination, is indistinguishable from the larval form of the *Ankylostomum* worm which, however, is said never to escape from the egg in
pure fæces. It is therefore probable that free forms of the larva of this worm have been often mistaken for Ankylostomum larvae. This may be prevented by very careful examination of the head of the worm, or better still by preserving the worm in a small mass of fæces (not too dry) till in a day or two the mature form of the worm has developed.

*Schistosomum japonicum.*—We are gradually getting more evidence of the presence of this helminth in China, and in certain districts it seems not to be very rare. We believe, however, that we are right in stating that so far the parasite has been found only in the Yangtse valley. Reports, please, from other centres.

*Flukes.*—Our friends from the Ningpo region have been conspicuous by their silence of late, while we outsiders are yearning for more news of their distoma. Cannot you, Mr. Editor, persuade them to share the wealth of their knowledge with us?

*Opisthorchis sinensis.*—The area of infection with this worm seems to be steadily enlarging. The Editor has reported it from Shanghai, and in a fit of generosity sent us some specimens. Dr. Booth reports cases with eggs of a fluke probably belonging to this or other nearly allied worm.

Lastly our apologies are due to the authors of these statistics for delay in publishing them. Peccavi.

**James L. Maxwell, Chairman.**

**Statistics from the late Dr. Stooke, of I-Chang.**

Notes of 54 examinations of 50 patients' stools were sent in, and Dr. Stooke writes further that in addition to these notes of stools, all of which contained one or more form of egg, there were four cases, not given in the list, from whose stools eggs were completely absent.

From the notes on the 50 cases we draw the following figures:

38 (or 76 per cent.) were infected with Ascaris eggs. Of these 17 showed the unfertilised eggs—in 12 cases mixed with the ordinary eggs and in 5 cases without any normal eggs being present. This seems to be roughly the average proportion of Ascaris infection throughout a great part of China.

11 (or 22 per cent.) were infected with Trichocephalus dispar eggs. The infection with this parasite strikes us as being an unusually small one.

11 (or 22 per cent.) were infected with Ankylostome eggs. The exact type of worm is not given. It is difficult to say, at present, whether this should be regarded as a large or a small infection. Certainly in Dr. Stooke's cases it does not correspond to a similar extent of the disease we call Ankylostomiasis. In 4 of the cases he notes that the hosts were not suffering from any disease.

12 cases showed the eggs of Oxyuris vermicularis, that is, 24 per cent., a very remarkably large proportion to show the eggs in the stools.

2 cases showed an infection with Amoeba coli. These were both cases of dysentery.

The absence of this protozoa is noted in another case of dysentery.
STATISTICS FROM DR. R. T. BOOTH, OF HANKOW.

Notes of 139 examinations of the stools of 131 patients were sent to us. Of these, 19 stools showed no presence of eggs, while 112 showed the eggs of one or other of the intestinal worms.

93 (or 71 per cent.) were infected with the Ascaris egg. Among this number 29 showed a mixed infection of the ordinary type of egg with the unfertilized Ascaris egg. 4 showed unfertilized eggs alone.

47 cases (or 35.9 per cent.) were infected with the Trichocephalus dispar. This I believe will be found more to approximate to the average infection over China than do the figures in Dr. Stooke's statistics.

15 cases (or 11.45 per cent.) were infected with Ankylostome eggs. This percentage is very much smaller than is found in South China generally, at least near the coast. The frequency of this parasite may be found to vary in China with the latitude and the distance from the sea; we badly need further reports. Dr. Booth does not mention to which type his worms belong, but we believe that a former report from Hankow stated that the Necator americanus was the parasite usually found there.

Oxyuris vermicularis was found in 13 stools (or 9.9 per cent.), but it is not stated whether the worm itself or the eggs were found.

Flukes were found in three stools, and from drawings which accompany the statistics we have little doubt that the fluke to which the eggs belonged was Opisthorchis (Clionorchis) sinensis. Dr. Booth points out that some of the eggs had a small spine or spicule projecting from the margin of the egg opposite to the operculum. We believe that few if any of the text-books mention this point, but it is a fairly common condition in the eggs of O. sinensis, and the spicule may vary in size from a mere point like thickening on the edge of the shell to a definite spine such as Dr. Booth describes.

No fewer than 9 cases (or 6.9 per cent.) revealed the eggs of Schistosomum japonicum. This worm is very important and the symptoms and course of the infection very little known. I trust we may hear more from our brethren in the endemic area about this parasite.

2 cases are recorded with infection of Balantidium coli.

EXTRACT FROM LETTER FROM DR. J. R. COX, RENSHEO, SZECHUAN. APRIL, 1908.

"I have seen a number of cases of anæmia in the dispensary which looked very much like the picture of Ankylostomiasis. I have been fortunate enough to get one of these patients under observation, and have been confirmed in my diagnosis by finding the ova in abundance, and after using oil of eucalyptus, as
recommended by Manson, the patient expelled numerous A. duodenale. An examination of 50 worms showed males in proportion of 1 to 4. I am sending you by this mail a few specimens of both male and female worms."

We have examined the worms sent and find them all to be true Ankylostomum duodenale.

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In Consultation.

CHUNGKING, October 23rd, 1908.

DEAR MR. EDITOR: I beg to enclose for the Medical Journal a photo of a very interesting case.

I first saw the patient in Chungking at "out-patients" in July; since then he has been to see us several times. The "case" we have diagnosed as Elephantiasis vera congenita (Elephantiasis vera mollis, Virchow). Dr. Assmy, of the German hospital, was called in consultation, and kindly took the photo.

The "case" is of interest in that only one limb—the right hand and forearm—is affected. He cannot give us any history beyond that he was born with it. It is not developing rapidly, but rather seems of quiet growth, developing with other limbs and general development of the body; radial pulse cannot be felt on account of tendons (?) thickening and constriction at the wrist, which is well shown in the photograph. On the outer side of the forearm, nearly midway between the wrist and elbow, is a thick scar about the size of an English shilling piece; it is of thicker consistence than the neighbouring tissues. There is no inconvenience, he says, beyond that caused by the weight of the hand and forearm, and we notice that whenever he comes into the dispensary he wears the swellings 'up his sleeve,' so to speak. Weight must be at least 7 lbs., and when asked to hit one's open hand with his right fist, it comes down like a sledge hammer. No axillary glands affected, and no pain.

What is the treatment? He states he has seen two or three foreign medical men in Shansi before he came west, and they recommended him to leave the limb alone, but he wants to get rid of the weight.

Is the condition a rare one in China?

Yours very sincerely,

R. WOLFENDALE.
Photo taken at Chungking, July 24th, 1908.
In Consultation.

CANTON, CHINA, December 22nd, 1908.

EDITOR, CHINA MEDICAL JOURNAL.

DEAR SIR: In one of the recent medical exchanges I noticed the review of a report on the pathological effects of a lack of oxygen through insufficient respiration. I would like to add what I believe to be another effect, and that is seasickness. Leaving out a certain hysterical few whose stomachs are very closely connected with their mental impressions I believe that the majority of seasickness is due to this fact. It was stated in the above article that even a slowing of the respiration for any length of time was followed by evidence of suboxidization as indicated by nausea, etc. It is a common experience for those newly aboard ship to hold their breath with every roll of the vessel. I believe this brings on suboxidization nausea, and we call it seasickness. I have had the same sensation after being in a hot and stuffy hall. How many of us on ship board, when we feel the nausea coming on, have not gone up on deck in the breeze and walked off the nausea? There have been many theories, but this latter explanation has seemed to work in my own case and many of those with whom I have associated on ship board. The rules: not too much food before coming aboard; light eating for the first two or three days; walk, walk, walk; do not go below until time to retire; have all the ventilation possible; go on deck as soon as possible after rising and walk or other exercise; lastly and best breathe deeply at all times.

I have noticed that lack of breathing due to cold weather is apparently responsible for a lot of the bilious attacks among my patients. I would like more information on this important subject.

Yours truly,

W. H. DOBSON.

ANKING, CHINA, December 18th, 1908.

EDITOR, CHINA MEDICAL JOURNAL.

DEAR DOCTOR: I am wondering if Parke, Davis & Company's antidiphtheritic globulins has been brought to the notice of the members of our Association away from the treaty ports. It seems to me to be just the thing for those of us who are out of reach of the Shanghai serum, but who feel the necessity of keeping a supply of antitoxin constantly on hand. To do this the serum has frequently to be renewed, entailing much trouble and expense. The globulins offer a
great advantage over the serum in this regard. I quote from the descriptive folder:

Antidiphtheritic globulins (dry) is a more recent product, and consists of the globulins of antidiphtheritic serum, which have been precipitated, purified and dried, so that most of the serum constituents have been eliminated, except those bearing the antitoxin. It is concentrated and permanent, always active and always ready for use. This product is so small in bulk that a full curative dose may be conveniently carried in the medicine case at all times and can be administered with no more trouble than an injection of morphine involves. It is marketed in hermetically sealed bulbs of 3,000 units; accompanying it in the same package is a bulb of sterile water, also hermetically sealed, in which the antitoxin may be dissolved. Solution takes place in a few minutes when the contents of the bulb are drawn up into the hypodermatic syringe and injected into the subcutaneous tissues in the usual way.

I have had no experience with the globulins myself, but as a product of Parke, Davis & Company it needs no further recommendation.

Faithfully yours,

H. B. TAYLOR.

Book Review.


This is an exaggerated sample of the abbreviated medical manual. It gives, in the concisest form, the main and established facts about syphilis and the other venereal diseases. We would protest against the desecration of the words "Golden Rules" in applying them to venereal disease. We have heard of poems on syphilis, but this, it seems to us, surpasses the bounds of literary decency. Others of the same series, such as "Golden Rules for Medical Practice," may be tolerated, however. Of the book itself, the matter is up-to-date and, except for the personal equation of treatment, such as we must all readily subscribe to. It is a book which a student might cram before examination, but as a working library book for any serious-minded physician, it is entirely too elementary. The man who does not know more about the subject than such a book can possibly teach him, would not be warranted in diagnosing or treating venereal patients.
PRESIDENT'S LETTER.

To the Members of The China Medical Missionary Association:

C. Berthel, a chemist of Shanghai, sends out from time to time circulars and advertisements in which he claims the approval of “medical missionaries” for his products and methods. He does this, not only without the approval of our Association, but against the protest of the members of its Executive Committee. In the absence of any law in China governing the manufacture and sale of proprietary preparations, Mr. Berthel has a legal right to make and sell any nostrum he can persuade people to buy. But he has no right to quote medical missionaries as approving his secret preparations, and we cannot believe that self-respecting physicians are doing so. This notice is given simply that members of the Association may know what attitude the Executive Committee has taken toward this matter and to warn the newer members against being exploited by one who constantly disregards professional etiquette. His adoption of the methods so uniformly condemned by the medical profession throughout the world greatly depreciates the attractiveness of the ethical business done by him. We feel that we must set ourselves right before the world in regard to this matter; hence we publish this notice disclaiming any responsibility for Mr. Berthel's representations and protesting against his further use of the general term “medical missionaries” in his circulars.

Geo. A. Stuart,
President C. M. M. Association.
THE RESEARCH COMMITTEE.

Our Research Committee has, so far, only been a qualified success. We have had some very interesting statistics sent in and a few good papers. But we have not got what we want. Let me state briefly what we do want.

We want every local branch to send us a report or reports directly or through its secretary. We want every individual member not connected with one of the local branches to send us a report.

If you can give us a paper on worms in your district, that is what we value most of all.

If you can't give us a paper, send in as many statistics as you can collect, and if you haven't begun collecting, begin to-day.

If you can't give us statistical sheets, send us a letter about the worms in your part of China.

If you grudge us the postage of a letter, send us a post card.

Only don't all think it is your neighbours' business. It is yours and now.

JAMES L. MAXWELL.

A PURE DRUG SUPPLY.

The following letter explains itself. It has been issued to the appended list of chemists and will be issued to others from time to time:

DEAR SIRS: We are writing to you in the capacity of Editor of the CHINA MEDICAL JOURNAL, and also of membership of the Executive Committee of the Medical Missionary Association of China, which has at present some four hundred members, controlling the purchasing power of about three hundred hospitals and dispensaries.

For some years past we have been regularly flooded with literature and samples which seek to introduce innumerable proprietary articles and drugs with proprietary names and with compound prescriptions of which the formulae are supposedly printed upon the containers. The point which we desire to bring to your attention is that in many cases the formulae as printed before the enactment of the Pure Food Laws in America, are different, and radically so in their most important features from those printed after; and this fact has bred in the Association a wholesale distrust of the methods and integrity of a number of the leading drug manufacturers who are seek-
ing trade in China. In one instance a complete acknowledgment of the previous practice of deception ('lying' is a better word) has been made to us in writing, and an absolute pledge that at the present time the formulæ printed on the products of that firm are, and for the future will be, intelligible, correct, and conclusive. As a result of our publication of this acknowledgment we anticipate that there will be an increase in the business of that firm in the East in the near future.

We are sending this letter in duplicate to all of those firms who are endeavouring to do legitimate business in China, and we shall register all copies sent; our intention being to print the answers given us to the following questions, and, where no answer is received, to state that our letter has not been answered by such and such a firm:—

1. Do you publish unqualifiedly the full and accurate formula of every product of your manufacture?
2. Do you believe in product patents and make use of the same?
3. Are your laboratories open to inspection by both the medical and pharmaceutical professions?

We should be glad also to have your answer to the question:—

4. Is it your practice to manufacture what is commonly known as "patent medicine" to be sold either under your own name or under that of other firms?

This letter will be published in The China Medical Journal, together with, or followed by, such answers to it as may be received by us. The questions are fair, and the opportunity is afforded you of presenting your methods and your reasons. If no answer is received, nothing will be stated beyond the fact that up to date such and such a firm has not answered our letter. We need not assure you that there is no disposition to boycott anybody, and that we merely desire to know that you will, or will not, guarantee us the perfect and comprehensive accuracy of your statements in regard to the products you are trying to sell to us. At the same time we think you may take it for granted that the purport of your answer will have considerable effect upon the prospects of your trade in China and the East.

Very truly yours,

Editor, The China Medical Journal.

List of Chemists.

*British Drug Co., London.
E. Merck, Darmstadt.
Burgoyne, Burbridge & Co., London.
C. J. Hewlett & Son, London.
*The Shanghai Dispensary.
Parke, Davis & Co., Detroit.
Ferris & Co., Bristol.
Johnson & Johnson, New Brunswick, N.J.

*C. Berthel, Shanghai.
Davis and Laurence, New York.
Frederick Stearns, Detroit.
Allen and Hanbury, London.
Fred Bayer Cie., Elberfeld, Germany.
Messrs Fletcher, Fletcher & Co., Holloway, London.

*Answered. (Br. Drug Co. too late for this issue.)
Dr. W. H. Jefferys,

Editor, The China Medical Journal.

Dear Sir: We acknowledge the receipt of your letter of January 1st, 1909, with many thanks, and gladly answer the questions, as we firmly believe that inquiry made in that form by the one most important journal in North China is of very much benefit to the public in helping them to know and deal with the chemists and druggists whose business is carried on in a strictly legitimate and honourable way.

1. Do you publish, unqualifiedly, the full and accurate formula of every product of your manufacture?

Everything we sell is imported from the most well-known manufacturers of chemicals and drugs in Europe and America. We do not manufacture anything except tablets and pills, the full and accurate formulae of which are published in our Price List.

2. Do you believe in product patents and make use of the same?

No.

3. Are your laboratories open to inspection by both the medical and pharmaceutical profession?

Yes.

4. Is it your practice to manufacture what are commonly known as "patent medicines," to be sold either under your own name, or that of other firms?

No. We do not manufacture "patent medicines." We import them from the makers. But we have some preparations made up according to the prescriptions of well-known and qualified physicians and which are sold as "Cough Mixture," "Diarrhoea Mixture," etc., etc., the formulae of which are sometimes on the labels, but in every case open for inspection.

We remain, Dear Sir, Yours faithfully,

The Shanghai Dispensary,

K. S. Tso, Sub-Manager.

W. H. Jefferys, A.M., M.D.,

Editor of The China Medical Journal.

Dear Sir: I herewith beg to confirm the receipt of your valuable communication dated January 1st, 1909. In reply to it I may say that I am not keeping stock in foreign patent medicines, but only of those manufactured by my firm. I only keep generally stock in drugs, chemicals, surgical instruments, and also, as mentioned above, patent medicines sold under my firm's name.

I am of course prepared with pleasure to publish to all missionary doctors or missionaries, who are interested to buy my patent medicines, the formulae of them in future, just as I always have done it in all cases in the past, when desired. The formulae are not printed on the labels, but will be disclosed on application by a separate letter by
me. (Labels bear only directions for use in English and Chinese.) I am also prepared to publish the formulae of every other product of my manufacture, as tinctures, extracts, and all articles manufactured by my firm.

Re your third question I may say that my dispatching rooms (7 Honan Road), as well as my works, now in erection (12 Robison Road), are always open to inspection by both the medical and pharmaceutical professions, if connected with a Mission.

Re fourth question. I beg to draw your attention to the fact that the aim of my business, since starting, was always to be a wholesale firm for hospital supplies only and to deal with missionaries only, but although in the last years many mission hospitals have been erected in the East by philanthropical work, the demand on drugs, chemicals, etc., etc., is only a limited one and not sufficient for a wholesale firm, managed on a larger scale, to handle exclusively in drugs and chemicals only, especially as many hospitals are not covering their whole demand on medicines from Shanghai firms, but are mostly ordering from home. Now, owing to the fact that the business with the mission hospitals could not be more extended at present, and owing to the fact that the great business success, as well of the Shanghai foreign as of the Chinese chemists, being the sale of foreign patent medicines, I have decided to go into this line of trade too, and have also started since a year ago, besides my foreign medicine business, a "foreign patent medicine department," which goods are manufactured by me and sold under my firm’s name, and which seems to me will be a prosperous one. I am pushing these medicines in several Chinese newspapers, and as they are all really good and cheap, so the sale of them has been increasing in a short time. That is the reason why I started a patent medicine department, and that the medicines are good, makes my conscience satisfied.

By this opportunity I beg to remind you my business, which being now especially well-outfitted with all hospital supplies (as drugs, chemicals, and surgical instruments kept in large quantities) and also to recommend you my patent medicines, which leave a good profit for your philanthropical work.

I am indeed very very pleased about your circular and what you say in view of the increase of the business in the East with the Mission hospitals, and would only wish that the firms established in China would find more recognition in future by the Mission hospitals.

Thanking you in anticipation, I am,

Very respectfully yours,

pr. pro. C. Berthel,

HANS BURDAM.

THE EMMANUEL MOVEMENT.

We have been very discreet indeed. We have allowed many months to go by without saying a single word about the "Emmanuel Movement," partly for the excellent reason that, although we knew little or nothing about it, even under those circumstances,
we had no particular convictions on the subject. Recently we have been reading *Religion and Medicine*, also numerous editorials, sermons, and accounts of the movement, even reports "of clinics and cases."

Let us stop here to remark that it has ever been a matter of conviction with us, an accepted and settled opinion, that of all the various forms of human activity, profession, or calling, the ideal Christian ministry is the very highest in its reach, the most delicate in its touch, the most human in its beauty, the very most difficult in its practice. Our love and reverence for the faithful men who have trodden this difficult path in all its wonder and glory makes us shrink from every slur or slight that the failures of some of their number, and the crass blindness of some of their critics, would put upon them. If we had been fitted, if we had been worthy, we also should have aspired.

Perhaps for this very reason we are equally convinced that of all classes of professional men, the average minister is the very least fitted to practice the science of medicine. In fact, we would even go further and say that during the last fifty years no class of educated men has been more obstructive to the progress of the best in modern medicine than the ministry. It is a chronic sinner on the patent medicine question, both personally and in church periodical advertisements. It is responsible for a large part of the most bigotted anti-vivisection legislation and agitation. It does more dabbling in ignorant and abortive practice, both at home and especially in mission fields, than all the others put together. And as preparation for this, it has less science in the curriculum of its schools than any other educated body.

Now, if the average general practitioner does not venture to undertake nervous cases because of their extreme difficulty and of the vast special training necessary, what can we expect from the busy priest who has no preparation and little time and to whom it must, after all, be far more of a hobby than a life-work. It is this everlasting dabbling and meddling and side-tracking, by which the ministers shift from their own shoulders their great and surpassingly difficult work of spiritualizing a world, that brings discredit of their faith, doubt of their usefulness, and criticism of their powers. If a man cannot do and stick to his own work, as, for
example, the originator of this movement, let him then go to school teaching or take up the study of medicine. But let him then call himself a professor or a physician, and not a clergyman, using the word as synonymous with an all-knowing one. If a man believes he has splendid magnetism, a great grasp of psychology, a passion for the mastery of morbid minds, let him give himself, body and soul, to that calling, but let him not make the false claim that because he is an ordained minister in the Church of Christ, for that reason he can do anything, all things, better than all others who are not ordained. The ordination blessing does not license a man to run a locomotive, or steer a steamship, though many clergy might be more useful in such capacity after due preparation. Why should it license to control a neurotic? Do they suppose that these neurotics have never been controlled because the very men who have this training and gift talk least about it, have a fine sense of delicacy in the matter, and know how to preserve their patients' confidences? If the ministry thinks that the profession of medicine needs spiritualizing, their work may be to spiritualize the physicians. But they will do it last and least by the practice of poor science and the side-tracking of their own work.

Let us close these gentle words by quoting at some length from a sermon recently preached by the Reverend Doctor C. L. Slattery, in Christ Church, Springfield, Mass. Dr. Slattery is a very level-headed thinker—in other words, he entirely agrees with us and we with him. We would go so far as to predict that Dr. Slattery's parish has more spirituality in it than would be found in the combined parishes of the whole brood of pseudo-scientific clerico-unclerical hobby dabblers.

Here is some of the Doctor's sermon:

For myself, I cannot believe that the power of the physician is in any sense waning, or needs supplanting, though I am sure that the physician must dare to do a new thing and frankly see that he cannot treat bodies without treating souls. The soul and God he must know somewhat more about, not only for his own sake, but for his patient's sake. Well, then, suppose there are nervous disorders which medicine cannot reach shall we of the clergy ask that persons suffering from such intangible but real maladies be turned over to us for treatment? I highly respect the men who wish to help their fellows in any way that they can; if a clergyman therefore can help a nervous person to regain physical health, I take it to be a token of his will to serve when he puts forth his power and heals the shattered nerves. But I question
whether it is, all told, the wisest use of the benevolent power intrusted to the clergyman. When Bishop Potter called the chief business men of New York together a few years ago, and preached one day his famous sermon in old St. Paul's, on "God and the City," he so stirred men's consciences that they said to him: "You have shown us our duty in reforming the political tone of our city; now do you lead us, and we will do a political reformation." The bishop flatly refused. "No," he said; "it is my function to point out the way—it is yours to go ahead as public men and laymen to do your duty." So, in general, the world is helped most if the different classes of citizens, each in its own profession and vocation, do their various tasks, inciting one another to a more nearly perfect service, but no one attempting to do that service for the other. That is, parsons wisely leave governing the state to legislators duly chosen for the task. The preacher may call a halt; he may praise. He must always be interested; he must always care. But he will not help his country greatly by laying down his ministry and going into politics. His vocation is a function great enough to occupy all his care and zeal.

In the same way exactly I can imagine that it might be our task, as ministers of Christ, to remind physicians that they say their prayers as well as read learned technical books, that they seek, in these and otherwise, the direct contact with the Lord God, who is a personal God, not a mere force, and is sought and known and realized in personal ways. But I cannot yet believe that it is wise for us to become nerve specialists, and to do work for which, in the main, the physician is better qualified, though for the moment, through shyness or neglect or, alas! through ignorance, he does not dare to thrill his patients into life by the Word God. I think we had better say to the physician: "Remember that God helps not independently of you, but through you, just in so far as you will let yourself be the medium of His help." In other words, we need, in addition to the profound technical knowledge of the modern physician—which technical knowledge is a divine gift, won through patient toil—in addition to this technical knowledge, I say, we need the inspiring faith of a great-hearted Christian man. It is not talking, it is not preaching—it is the light shining in the eye, it is the confident ring in the voice, it is the reverence of the whole bearing, which proclaims the physician a man called of God to his holy vocation.

The part of the Emmanuel movement legitimate for the clergy is, and always has been, a function of clerical life; the rest is the part of the trained neurologist and must remain so. q.e.d.

Resolved, 1. That ordination vows and medical certificates are not synonymous terms.
2. That Christian principles and the study of psychology are essential to the complete medical practitioner.
3. That physicians are not as a body sufficiently spiritually inclined.
4. That certain clergymen are far too medically inclined.
5. That it is time to adjourn and get over to the hospital, lest we find a clerical collar and a "fried egg" at work in our operating room.
ASSOCIATION NOTES

BRANCHES OF THE C. M. M. A.

Central China Branch:—Dr. J. G. Cormack, Hankow, Secretary.
Kuling Branch:—Dr. C. W. Somerville, Wuchang, Secretary.
Manchurian Branch:—Dr. W. Phillips, Newchwang, Secretary.
Korean Branch:—Dr. H. H. Weir, Chemulpo, Korea, Secretary.
Shanghai Branch:—Dr. A. W. Tucker, St. Luke's Hospital, Secretary.
Mokanshan Branch:—Dr. J. C. A. Beatty, Hangchow, Secretary.
West River Branch:—Dr. Kate W. McBurney, Taotung, Secretary.
Han Valley Branch:—Dr. R. Anderson, Taoshun, Secretary.
Peking Branch:—Dr. F. E. Dilley, Peking, Secretary.

NEW MEMBERS OF THE C. M. M. A.

Joined through the China Medical Journal:—

PAUL F. FULUS, M.D., Heidelberg, Surgeon in German army, on special duty at Consulate at Chungking.

Joined through the Peking Branch:—

FREDERICK E. DILLEY, M.D., Western Reserve U., Cleveland, O., A. P. M., Peking.
MELISSA MANDERSON, M.D., University of Toronto, M. E. M., Peking.
JOHN V. MULLOWNEY, M.D., University Penn., M. E. M., Peking.

Letters on Association business should be addressed simply, Secretary, C. M. M. A., 2 Shantung Road, Shanghai. Dues should be sent directly to the Presbyterian Press, 18 Peking Road.

Will the Branch Secretaries please send Dr. Cousland a list of their members?

Dr. Christie writes:—"My hopes of over 20 years long are at last likely to be soon realized in the establishment of a medical college in Mukden. The Viceroy is giving me a grant of 3,000 taels per annum. The officials and merchants are subscribing liberally, a site is already secured, and I hope to be able to build the college (Tls. 15,000) and run it too without drawing on our home church's Foreign Mission Committee. I laid the scheme before our Council meetings recently and it was very heartily received. Pray that God may lead us in every step in this matter."

Dr. D. Duncan Main, of Hangchow, suffered a serious loss in the disappearance of the greater part of his translation of Caird and Callcott's Surgical Handbook through the agency of one of the students who had a bad attack of "railway fever" last year. Consequently he has had to set to and re-do the work. He now writes: "I sent the manuscripts of C. and C. to you last week in Peking. Registered letters. Hope it will not be lost. If it is, it will kill me! As things are, it looks as if I would not get out of this world alive! We go home in February, and while there I hope to get money to help to build a large medical college here. Hoping to see you en route for Bonnie Scotland, Keep Smiling."

Dr. J. L. Maxwell says:—"I hope to send in a week or so an article of great interest on mosquito wire gauze. I have received through Sir P. Manson a very interesting and valuable government paper on the durability of various kinds of gauze which he has got me permission to quote extensively for publication."

No statistical blank was sent out for 1908. Please keep careful statistics for this year, 1909, and let us have full figures for all hospitals and dispensaries.

Messrs. Burroughs, Wellcome & Co. have opened a branch at 44 Szechuen Road, Shanghai, which will be a convenience for their customers in China.
## FINANCIAL STATEMENT.

### C. M. M. A. IN ACCOUNT WITH THE PRESBYTERIAN PRESS FOR 1908.

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The China Medical Journal.
PUBLICATION COMMITTEE.

SUBSCRIPTIONS.

Wesleyan Methodist Missionary Society ... ... ... ... ... ... ... $240.94
Robert Arthington Trust ... ... ... ... ... ... ... ... ... 1,205.90
Basel Mission ... ... ... ... ... ... ... ... ... £20
English Baptist Mission, Medical Auxiliary ... ... ... ... 461.71
American Presbyterian, South, for 1908 ... ... ... ... G.$100
Methodist Episcopal Mission ... ... ... ... ... ... ... ... ... 100
American Protestant Episcopal Church ... ... ... ... ... ... ... 704.29
American Board Com. for Foreign Missions. Tls. 179.37 ... 24.71
Dr. J. C. Carr ... ... ... ... ... ... ... ... ... 5.00
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Dear Sir:

Dr. Gould has been kind enough to allow us to look over the copy of the English-Chinese Lexicon of Medical Terms. We have had some experience in the making of medical dictionaries, and we want to congratulate you upon the successful carrying out of this very important work.

If we can, in any way, forward the interests of your book in this country, we shall be glad to do so. We presume there will be very little demand here for such a work, but if you will send us half a dozen copies with bill at trade discount, we will be glad to call the book to the attention of those who may be interested.

Yours very truly,

P. Blakiston's Son & Co.

The Editorial Secretary has recently returned from a visit to Peking and Hankow. At the former place our books were brought to the notice of the Chinese doctors interested in Western medical education, and a visit was paid to Vice-President Yen, of the Board of Education. Dr. Douglas Gray, of H. B. M. Legation, and Drs. E. Peill and Li, of the L. M. S., with the Secretary, formed the deputation. We met with a very friendly reception. With so highly technical a subject it is hardly to be expected that the Board will feel competent to pass judgment on our work, but the authorities now at least know what we are doing and planning. The medical course in the Imperial University is to be in English, conducted by foreign-trained Chinese doctors; so we were told. So the C. M. M. A. has the field to itself yet in medical education through the Chinese language.

Very good work is being done in the medical schools at Peking and Hankow. When the recent additions to the Peking faculty have had more time at the language there will be a large and very competent teaching staff. At Hankow the plans for a large union college are making satisfactory progress. The present staff, though numerically most inadequate, is thoroughly experienced and capable. A visit to these institutions shows clearly the enormous difficulties to be overcome in establishing and running a fully equipped high-standard medical school. Not one of the least difficulties is the dearth of well educated boys. This lack the Mission high schools should gradually supply.

A Nurses' Association.

Very few replies have been received in response to the circular re the formation of such an association. Past experience with this method of eliciting opinions inclines one to believe that this does not necessarily show any lack of interest in the subject. It only wants to be taken up by one of the nursing schools and properly laid before all the nurses. Perhaps a meeting to consider the project and, if practicable, form such an association, can be arranged for at the same time as the C. M. M. A. Conference in Hankow next year.

How many schools for nurses are there? Here are four:—Canton, Julia M. Turner Training School for Nurses; Hankow, union training scheme for male and female nurses in several of the hospitals (see page 122); Peking, union school (?) in connection with the work of Drs. Gloss and Leonard; Nanking, the Nanking Union Nurse School.

Dr. Fulton writes re this proposal:—"Good! At our Julia Turner Training School a dozen nurses are now studying. Four have graduated."

Dr. Chesnut, who was killed at Lienchow, was preparing a translation of Mabel Adams Hampton's Principles and Practice of Nursing. This has been finished by Mrs. J. J. Boggs, M.D., and is now ready for the press.
Dr. Fulton has kindly presented the Publication Committee with a supply of her translation of Nursing in Abdominal Surgery and Diseases of Women, by Anna M. Fullerton, M.D., Philadelphia. This is a book of 36 double pages in Easy Wén-hi, printed in Chinese style. There are 17 chapters; the last being devoted to recipes for sick-room dietary. These, of course, are foreign. Some day some one will teach us how to utilise native foods and methods. The terminology follows the Medical Lexicon. Next edition the Doctor will perhaps add English headings and foot notes for the sake of the inexperienced. This is a very valuable gift, as we have at present only one book on nursing—The Manual of Nursing—a second edition of which has just been printed. See advertisement page.

JULIA M. TURNER TRAINING SCHOOL FOR NURSES, CANTON.

Second Annual Graduation, Friday the Eighth January, 1909.

- Hymn
- Devotional Exercises
- Hymn
- Address
- Address
- Hymn
- Presentation of Diplomas
- Presentation of Prizes
- Song
- Benediction

NANKING UNION NURSE TRAINING SCHOOL.

A class for training nurses was opened at Friends Hospital, Nanking, October, 1907. Seven Christian young women entered and began practical work in the wards, dispensary, and out cases. The Course of Study has been Nurses' Text Book, Physiology, Anatomy, Materia Medica and English.

During the year two of the nurses were engaged by one of the Mission doctors to nurse in three foreign families in the city, to the satisfaction of both doctor and patients.

Private cases have been taken care of in the hospital by these students with satisfactory results. We were very much encouraged by this manner of multiplying our powers, and when asked and urged by the physicians of the several Missions to continue our work in this line, and give a regular full course of study for nurses, and make the work Union, we called a meeting of the nurses from the different Missions, which met October 3rd, 1908. At this meeting it was stated that the Friends Hospital would accommodate the students, temporarily, and that in the near future a building would be erected. The following resolutions were passed:

Resolved, That a Union Nurse School be started in Nanking at once, and that the matter be presented to the stations of each Mission in the above city.

Resolved, That we, the undersigned, give lectures and practical demonstrations in the Union Nurse School as follows, commencing Monday, October 5th, 1908.

- Dr. Lucy A. Gaynor, Physician in charge.
- Mrs. Mollaud, 2.00-3.00 p.m. Monday—English, Instruments, Appliances, etc. Wednesday—Hospital Economics.
- Miss Randall, 3.30-4.30 p.m. Thursday—Massage. Friday—Baths.
- Mrs. Burns, 3.00-5.00 p.m. Daily except Monday. General Nursing. Tuesday—Bandaging. Saturday—Anatomy.

Following this, October 5th, 1908, the training class was organized as The Union Nurse School, with eleven students representing the Missions of Nan-k'ing and elsewhere, and from the following important centers: Hongkong, Shanghai, Ningpo, Chinkiang, and Wuhu. Two students attend part of the classes and have practical work in the hospitals with which they are connected.
It is expected to have in connection with the school a nursing home with a foreign-trained nurse in charge and accommodations for foreign patients.

It is also the intention to prepare nurses that they may go into the Chinese and foreign homes.

Arrangements will be made whereby Bible-women and others who may wish and come recommended, may train for emergency work.

Student nurses are ready for district nursing calls.

The promised building now erected, accommodating twenty students, will be ready for public opening during the China New Year holidays.

It was decided that $500 was the least that would cover the cost of furnishing and providing the necessary equipments for teaching.

We solicit your investigation and contributions. The latter may be sent to any of the three Mission hospitals of the city.

The expense of this school is entirely to be met by nursing receipts and scholarships. All are invited to assist in securing patrons for the latter.

The needed support for a student for one year will be thirty dollars gold. Partial support, fifteen dollars gold.

Lucy A. Gaynor, M.D.,

On behalf of the committee.

Nanking, China, January, 1909.
Reports of Local Branches.

PEKING BRANCH.

On December 30th, 1908, in the Union Medical College, Peking. At a meeting called by Dr. Cousland there were present Doctors Aspland, Cousland, Glass, Manderston, Hall, Hopkins, Lowry, Muldowney, Peill, Stenhouse, Wenhaw, Wheeler, Young, Gibb, and Dilley.

It was proposed, voted upon and carried that a branch of the China Medical Missionary Association be formed in Peking.

The following constitution was presented and accepted by unanimous vote:

CONSTITUTION OF THE PEKING MEDICAL SOCIETY.

I.—This society shall be called the Peking Medical Society, being a branch of the China Medical Missionary Association.

II.—The objects of the society shall be the cultivation and advancement of the science of medicine and the promotion of medical missionary work.

III.—The meetings of the society shall be reported in the China Medical Journal.

IV.—The officers of the society shall consist of a President, Vice-President, Secretary, and Treasurer, who shall form a council, and manage the affairs of the society. The outgoing president shall become the vice-president for the ensuing year and the remaining officers shall be elected by ballot at the annual meeting.

V.—The society year shall run from October to May.

VI.—The meetings shall be held once a month on the first Wednesday evening, to commence at eight o'clock.

VII.—At the meeting in May, in addition to the ordinary business, the officers shall be elected and reports of the secretary and treasurer read.

VIII.—The secretary shall give the members three days' notice in writing of every meeting.

IX.—Nine members shall constitute a quorum.

X.—The society shall consist of ordinary and honorary members. All legally qualified medical missionaries in North China shall be eligible as ordinary members. Honorary members may be elected on the proposition of the Council from amongst any non-missionary medical men in North China. Ordinary members shall be proposed at any meeting and elected at the next. Honorary members shall be proposed by the Council and elected by a two-thirds vote at the following meeting.

XI.—The secretary shall keep the minutes of the meetings and report the same to the China Medical Journal. He shall notify the new members of their election and send out notices of all meetings. He shall keep an accurate list of the members and shall draw up an annual report to be read at the annual meeting.

XII.—The treasurer shall receive and have charge of all moneys of the society. The accounts shall be audited by the Council and presented at the annual meeting.

XIII.—The Council shall prepare the programme for each session, propose honorary members, call special meetings of the society, and generally form a standing committee to which any special matter may be referred. All vacancies which may occur in the officers of the society between one annual meeting and another, shall be filled up by the Council.

XIV.—A subscription of one dollar (Mexican) per annum shall be paid by each member.

XV.—Alterations in this constitution can be made at any meeting by a two-thirds vote, but the changes must have been presented in writing at the previous meeting.

The following officers were elected by ballot:

President, Dr. Wm. H. G. Aspland.
Vice-President, Dr. F. J. Hall.
Secretary, Dr. F. K. Dilley.
Treasurer, Dr. E. R. Wheeler.

The meeting unanimously voted in favor of Chinese New Year 1910 as the date for the next Triennial Conference of the C. M. M. A.

The paper of the evening was presented by Dr. Cousland.

REPORT OF C. C. M. M. A. FOR 1908.

We can again feel satisfied that in the year that has passed interest in the Association meetings has been well sustained.

Though the programme, which was so carefully drawn up by the Council, has only been adhered to by a few of the writers of papers, yet all the papers read were of much interest and help. The clinical meetings have been, as usual, most helpful and instructive; the number of specimens shown being of much interest.

Hankow, from its unique position as a point of departure for travellers going to North, Northwest, West and South Central China, has
often given us the pleasure of welcoming doctors, going to, and coming from, those distant fields; and with the prospect of the progress of railway communication in China, such visits, we trust, may become more frequent in the coming years.

Among the papers read this year, it seems worthy of note to mention one by Bishop Roots on the subject of "Faith and Healing." This paper, touching as it did on the relationship of mind and matter, with their action and interaction, has led to the promise of a second paper in the coming year on the allied subject of "Demoniacal Possession" and its relation to disease. We were also favoured with a paper from Dr. Aird on the Cholera Epidemic of the past summer. The presence of the community doctors at our meetings occasionally has been most welcome.

This year the first examination for the nurses' diploma, under the auspices of the Association, was held in November. Three presented themselves for examination, and all passed successfully. These will, in due course, get the Association's diploma. It is hoped that the number presenting themselves for examination will increase from year to year, and that gradually we shall secure a more efficient and better class of nurses, and also help to raise the status of the nursing profession in China.

We were glad to welcome Dr. E. Merrins, of the American Church Mission, as a member of the Association this year, otherwise the membership remains practically as in former years. It was also a pleasure to have Dr. R. Massey and Dr. Somerville back in our midst at the close of the year.

Arrangements for the conference of 1910 have been discussed, and we are looking forward to a large representation of doctors in our midst at that time.

Thirteen meetings have been held; our last being the 145th since the founding of the Association. So we congratulate ourselves on our long career and trust it may become more and more useful as the years go by.

From the list of cases and specimens shown, the following may be mentioned. These were discussed and many helpful suggestions given as to the line of treatment to be adopted:

CASEx.
- Ankylosis of jaw; duration 20 years.
- Lateral dislocation of patella.
- Phosphorous necrosis of jaw.
- Tubercular swelling covering greater part of brow.
- Fecal fistula.
- Large epulis.
- Choroiditis with nystagmus.
- Epilepsy associated with blindness.
- Kalaazar (?)
- Large sarcoma of neck treated with Colles fluid. Result, nil.
- Progressive muscular atrophy.
- Toxic peripheral neuritis.
- Retro peritoneal abscess.
- Parotid tumour.
- Facial paralysis of left side, with paralysis of accommodation of right eye.
- Large sarcoma of shoulder.
- Angioma of upper limb; very large.
- Recurrent sarcoma of knee.
- Melanotic sarcoma of foot, showing secondary deposits on thigh.
- Cystic adenoma of breast.
- Syphilitic tumour of tongue.
- Double psoas abscess.
- Spastic paralysis.

SPECIMENS.
- Fibroma from abdominal wall.
- Cystic adenoma of cheek.
- Hydatiform mole.
- Papilloma of prepuce.
- Cystic adenoma of breast.
- Ovarian dermoid, 100 lbs. weight, showing rudimentary eye.
- Pedunculated vulval tumour.
- Large hernial sac.
- Dumbbell-shaped urinary calculus.
- Osteoma.
- Plague bacillus.
- Egg of Bilharzia.

J. G. CORMACK,
Sec. C. C. M. M. A.
CENTRAL CHINA BRANCH, 1909.

President, Dr. T. Gillison.
Vice-President, Dr. E. Merrins.
Treasurer, Dr. E. Brethauer.
Hon. Secretary, Dr. H. Byles.

SYLLABUS FOR 1909.

Jan. 27th, Presidential Address, Dr. T. Gillison.
Feb. 17th, Report of Investigation Committee, Dr. J. MacWilliam.
March 3rd, Clinical Meeting.
17th, Laboratory Work, Dr. C. Somerville.
31st, Clinical Meeting.
April 14th, Diseases of Women with special reference to Out-patient Treatment, Dr. Ruth Massey.
28th, Clinical Meeting.
May 11th, Paper, Dr. Byth.
20th, Demonical Possession in relation to Disease (Open Meeting), Dr. E. Merriin.
June 16th, Clinical Meeting.
Sep. 15th, Clinical Meeting.
25th, New Remedies and Their Application, Dr. T. MacWilliam.
Oct. 12th, Clinical Meeting.
31st, Enquiry into cases of Jaw Necrosis, Dr. J. Williams.
Nov. 1st, Paper, Dr. Thompson.
15th, Clinical and Business Meeting.

Manila Medical Society.

Proceedings of the Meeting of December 7th.

Dr. J. H. Fitzbutler.—Demonstration of a case of congenital, bilateral absence of the external auditory meatus.

Dr. W. E. Musgrave and M. T. Clegg.—Trichocephaliasis with a report of four cases including one fatal case.

Secretary's Abstract.—Case I.—Male Filipino, twenty-four years, admitted to St. Paul's Hospital August 9th, died September 16th, 1908. Family history: negative. Previous illnesses: chicken-pox, a few mild attacks of "malaria" and, five years ago, an abscess of parotid gland. Present illness: three weeks before admission began to feel dizziness, weakness, slight fever in the afternoon, and ringing in the ears; condition grew worse, and about ten days before admission noticed beginning edema of ankles, hands and face. On admission, complained of shortness of breath, great weakness, ringing in the ears, palpitation of the heart, nausea, lack of appetite, dyspeptic symptoms and slight diarrhea. Examination,—

Marked edema of extremities and face, marked pallor of mucous membrane, rapid shallow respiration, slight hepatic murmur at apex; pulse 110. Blood examination.—Red cells, 1,800,000; leukocytes, 10,000; hemoglobin, 30 per cent.; mononuclears, 65 per cent.; polymuclears, 30 per cent.; transitional, 5 per cent.; no nucleated red cells; moderate pyuria; no cosinophiles. Respiratory system negative. Alimentary tract: lips extremely pale, tongue large and flabby with very dark streak down its centre, slight accumulation of fluid in abdomen. Liver slightly enlarged. Spleen not palpable. Stomach contents normal. Examination of stool showed enormous numbers of ova of Trichuris trichiura.

Nervous, locomotor and cutaneous systems normal. As disease progressed, edema became general and increased, anemia more pronounced; blood count a few days before death gave, red cells, 84,000; hemoglobin, 18 per cent.; no un­ nucleated red cells, no cosinophiles. Nausea and vomiting very distressing; nervous and mental symptoms developed to active delirium. Patient finally died of asthenia. There were not at any time any hemorrhages or severe diarrhea and stools always showed large numbers of Trichuris ova; there being no ova of other intestinal worms. Attempts to dislodge the worms with thymol, and with the eucalyptus, castor oil, and chloroform mixture were not successful. At autopsy by Dr. Gilman, he made a diagnosis of severe secondary anemia. About 250 whipworms were found in the cecum and lower part of small intestine.

Case II.—Case III.—Under observation for ten days and one month respectively; presented the same clinical picture as Case I, and both showed large numbers of whipworm ova in the stools with no other discoverable cause for the severe anemia present.

Case IV.—This case is reported not as one of trichocephaliasis, sensu stricto, but as a curious case of sudden death in which the autopsy showed the coronary artery plugged by an adult Trichuris.

Literature reviewed.

Trichocephaliasis.—Definition, etiology pathology, symptoms, diagnosis, prognosis, prophylaxis, treatment.

(Note.—This paper will appear in full in the Journal of Science, Manila.)

At the close of the program the meeting proceeded to the organization of the local society of the Far Eastern Association of Tropical Medicine. Twenty members were enrolled, and the following officers elected:—Local Vice-President, Dr. J. M. Phalen; Local Secretary-Treasurer, Dr. S. C. Gurney.

Attendance, 19.

P. E. Garrison,
Secretary.
NOTES ON PLAGUE.

In view of the occurrence of plague in several centres in China, and especially in view of its having broken out, happily in sporadic form so far, in the Yangtze valley, it seems wise to make special note of several recent contributions of importance concerning the spread, method of infection, intermediary hosts, and methods of extermination.

1. Mode of Dissemination.

In spite of the theory advocated by Dr. W. J. R. Simpson that food plays no inconsiderable part in the spread of plague, the most recent work done by the Indian Plague Commission goes to show that contamination of food does not readily cause infection with plague. While no position can be maintained that absolutely denies the dissemination of plague by other than the one method through flea-bites, the following evidence from India is very suggestive that no other method is usually to be discovered. By placing healthy and infected rats in adjoining cages and excluding all other external sources of infection (excepting "aerial infection"), healthy rats on thirty occasions contracted plague in sequence to living in the neighborhood of plague-infected rats under circumstances which prevented the healthy rats coming in contact with either the body or excreta of the plague-infected rats. In all cases a fairly abundant supply of fleas was present; these could pass freely between the two rats used in each experiment, and except for "aerial contagia," they formed the only apparent means of communication between the animals. The presumption is that plague was transferred from the sick to the healthy rat by fleas.

A second series of experiments was made with Guinea-pigs, and gave the following conclusions: Close contact of plague-infected animals with healthy animals, if fleas are excluded, does not give rise to an epizootic among the latter. As the godowns were never cleaned out, close contact included contact with feces and urine of infected animals and contact with and eating of food contaminated with feces and urine of infected animals, as well as with pus from open plague ulcers. Close contact of young, even when suckled by plague-infected mothers, does not give the disease to the former. If fleas are present, the epizootic, once started, spreads from animal to animal; the rate of progress being in direct proportion to the number of fleas present. The epizootic was very rapid in godowns where the fleas were abundant and came in naturally; it was slower in a godown in which the fleas supply was kept up artificially, and finally it was slowest of all in a godown in which there was no definite natural supply of fleas. An epizootic of plague may start without direct contact of healthy animals and infected animals. Thus in one experiment healthy Guinea-pigs were not put in the godown until the last inoculated Guinea-pig formerly kept therein had died and been removed.

A third series of experiments in plague houses brings out several
important points as follows: Guinea-pigs allowed to run free in plague houses often attracted many fleas; these fleas being mostly rat fleas. Of such animals twenty-nine per cent contracted plague and died. If a plague house had been previously disinfected by the ordinary methods of disinfection, fleas were still caught in large numbers on Guinea-pigs set free in them. Twenty-nine per cent. of these also died of plague. Fleas transferred from plague-infected rats found dead or dying in plague houses were able to transmit plague to healthy animals in flea-proof cages in the laboratory. Fleas transferred from Guinea-pigs and other animals which had been placed for a few hours in plague houses were able to transmit the disease to fresh animals when fed on these in flea-proof cages in the laboratory. A census of rat fleas in houses in Bombay, which were proved plague-infected, indicated that rat fleas were twelve times as numerous as in control houses, and that in presumably plague-infected houses rat fleas were four times as numerous as in control houses.


There were two striking differences in the pathological lesions found in rats naturally infected and in those infected by feeding with infected material. First, the common site of the primary bubo in naturally infected rats was in the neck, no mesenteric bubo being seen in 5,000 post-mortems; but in the case of fed rats the common site was the mesentery. Second, in the case of naturally infected rats the stomachs and intestines showed no marked pathological change, while in the case of fed rats well marked pathological lesions were found in the intestines. It would appear that in nature intestinal infection rarely or never takes place and that in consequence rats do not become infected by eating the carcasses of their comrades. (I call special attention to this conclusion and to the one above, where it was shown that even feeding upon the excreta of infected animals did not produce infection, as rather tending to disprove the theory of Dr. Simpson.)

The locality of the primary bubo in animals infected with plague in nature was regarded of great significance, and seemed to prove that in nature rats are not infected by feeding on plague-infected material, but probably by the agency of fleas.

3. The Flea.

Most of the studies were conducted on Pulex cheopis, the usual Indian rat flea. The average capacity of the rat flea's stomach may be approximately estimated to be 0.5 cubic millimetres; a rat flea imbibing blood from a plague-infected rat may receive as many as 5,000 germs into its stomach. Fleas were dissected every day for twenty-three days. In a certain proportion abundant plague bacilli were found in the stomach contents up to the twelfth day, and in one instance on the twentieth day. It was therefore regarded as definite that plague bacilli multiplied in the flea's stomach. Plague bacilli were present in the rectum and feces of fleas taken from plague rats, and such feces were found to be infective to Guinea-pigs. On rare occasions plague bacilli were found in the oesophagus, but never in the body cavity or salivary glands. Two series of tests were made to determine the length of time that fleas might remain infective, and in one, they were able to transmit infection after ten days; in the second, after fifteen days. This, however, was in the plague season, and in the non-epidemic season, the fleas were infective for seven days only.
A single rat flea may transmit the disease. Both male and female rat fleas may transmit the infection.

Twenty-seven experiments were made to transmit plague from animal to animal by means of cat fleas (*Pulex felis*), and none were successful. Thirty-eight experiments were made to transmit plague from animal to animal by means of human fleas (*Pulex irritans*), and three were successful. Two experiments with *Ceratophyllus fasciatus* were both successful.

And finally, it should be noted that the bite of a healthy flea was found to afford a sufficient avenue for infection by septicemic blood if spread on the bitten part.

While, as shown above, *Pulex cheopis* is the common rat flea in India, reports from San Francisco show that the prevailing species there, in a series examined up to July 31, 1908, was *Ceratophyllus fasciatus*. *Pulex cheopis* was second, *Ctenmuschi* was third, and *Ceratophyllus canis* fifth in the list; *Pulex irritans*, the commonest flea on man, being forth in the list as a rat flea.

4. Rats and Squirrels.

The commonly infected rats in India are *Mus rattus* and *Mus decumanus*. Three rats in San Francisco were found capable of carrying infection, namely, *Mus norwegicus*, *Mus rattus*, and *Mus musculus*.

A very important discovery is that reported from San Francisco, dated August 28, 1908, in which McCoy describes the infection of the ground squirrel (*Citellus beecheyi*) with bubonic plague. The case occurred in a ranch on which a case of human plague had been reported twenty-five days earlier.

Later on, other squirrels in California presented positive evidence of plague infection. Since this time many other small animals have been examined in the laboratories on the Pacific Coast, and the bacillus *pestis* has been demonstrated only in squirrels and rats, though mice, rabbits, gophers and coyotes were also examined. The methods of the spread of the disease between rats and squirrels had light thrown upon them when two common squirrel fleas, *Ceratophyllus acutus* and *Hoplopsyllus anomalus*, were found upon rats near San Francisco.

5. Destruction of Rats.

In his recent visit to Japan Professor Koch was persuaded to give public expression to his views on methods of extermination of plague, and the following abstracts give the gist of his statements on demurization:

"Successful demurization must be based on this principle, namely, the seeking out and the utilization of the natural enemies of the rat. I have used in my experiments a number of voracious animals, among them the ichneumon of Egypt, the mongoose of India as well as the common European ferret. Their beneficial effects are offset by the loss they occasion and their practical value is nil. On the other hand, cats have been always the most common and the best known enemies of the rat. They are in all respects the most fitted for the task before us. In employing cats for this purpose we should determine a certain system and follow it out in an orderly manner, in the main as follows:

(1.) Pass laws requiring each house to keep a certain number of cats and cause the police to make frequent inspections.

(2.) By establishing a system of prizes seek for cats of approved ability as ratters."
3. Encourage the introduction and propagation of strains of cats especially skilled as ratters.

4. Vessels plying between plague-infected ports should be obliged to carry a fixed number of cats; the number depending on the tonnage of the vessels.

5. Building regulations should require that attics and other places frequented by rats should have openings large enough to admit cats.

6. In the case of plague-infected districts or areas threatened with invasion, companies of cats should be organized, and at fixed intervals they should be isolated and the presence or absence of plague among them should be determined.

It is interesting to note that following out these suggestions an attempt has been made in a well-isolated Indian village to drive out plague by means of cats; the system of introduction of these animals being well controlled. The experiment was entirely successful, and will be the forerunner of many other similar attempts to fight a disease with its natural means of subjugation.

N.B.—Most of the material for the above notes has been gleaned from "Public Health Reports," published by the U. S. Public Health and Marine Hospital Service.

Immediate versus Deferred Operation for Intraabdominal Hemorrhage due to Tubal Pregnancy. By Hiram D. Vineberg. (Read before the American Gynecological Society, Philadelphia, May 2nd, 1908.)

In treating this subject, we must take into consideration the amount of blood effused into the peritoneal cavity in each individual case. As we all know this varies within very wide bounds, depending upon the portion of the tube which has been ruptured or eroded. Again, we know that in tubal abortion the quantity of blood poured into the general peritoneal cavity at times may be very great, equaling in amount that occurring in the most severe forms of tubal rupture. This is not a matter of mere theory, but of actual observation by different operators. We know also that the raw area of a tube which has been ruptured or has been eroded will go on bleeding for an indefinite time, or the bleeding may cease for a time, to be renewed again after a variable period. This renewed bleeding may take place while the patient is at rest in bed, and has been known to occur even while the patient was asleep. Of course it is more likely to occur after some slight exertion or after a bimanual examination, which need not be carried out with any undue violence. As a matter of experience we know that in the vast majority of cases the amount of blood effused into the abdominal cavity, either from abortion or rupture, is not so great as to be a direct menace to the life of the patient. Still with the lesser degrees of intraperitoneal hemorrhage the attendant symptoms may be quite alarming and may simulate in a marked degree those attendant upon the more copious effusions. There will apparently
be the same degree of pallor, the patient may go into apparent collapse and the pulse may become imperceptible. But in these cases reaction will occur within a comparatively short time. The acute observer will be able to note in these cases that the symptoms of collapse were due to the shock attendant upon the impact of blood upon the peritoneum rather than to acute anemia. Now whether we operate upon these cases—forming about 95 per cent. of all the cases that come to the operator—shortly after the hemorrhages have taken place or wait for a day or two to suit the exigencies of the case, or the convenience of the operator, or the service in the hospital, in my opinion matters but little. Theoretically the results ought to be better if time be taken for the preparation of the patient, and I am not inclined to split hairs upon this point. So far as my experience goes my emergency patients have gotten well equally as satisfactorily, and often more so than when they have been subjected to preparations for a couple of days before the operation. I think we learned from last year’s discussion, in this society, that the active preparation of the patient prior to laparotomy, to which many laid such store, was a fetich and often did more harm than good. This I do know that since we have given up the active purgation and preparation of the patient formerly in vogue in the hospital our patients have suffered much less from meteorism and other discomforts following abdominal sections. From what I have said thus far it is evident that there is not much room for a difference of opinion as to the time of operation in about, roughly speaking, 95 per cent. of the cases.

It is then in the treatment of the remaining 5 per cent. that the bone of contention is to be met. This percentage is composed of the cases of tubal abortion or rupture in which the amount of blood effused is so great as to inundate the entire abdominal cavity, distending it to its greatest extent, pushing the diaphragm upwards to such a degree as to seriously crowd the lungs and heart, and placing the life of the patient in the greatest jeopardy or killing her outright in from one to twenty-four hours. These cases the author has termed "cataclysmic," from the suddenness of the event and from its overpowering character. In operating upon them it is like cutting through the abdominal walls of a corpse, the tissues being practically bloodless. When the peritoneum is reached, it is found of a very dark color and bulging outwards, and when incised the blood spurs out with considerable force. The patients are either apathetic and partially or wholly unconscious, or are restless and in great anxiety. The countenance is of a sickly livid color or deathly white, the mucus membranes of the lips and eyes are completely blanched and the pulse is very small, soft, and rapid, or is totally absent in the vessels of the wrist.

The assertion has been made that no matter how alarming the condition may apparently be, the patient seldom dies if the spark of life be not extinguished by surgical intervention. I cannot dismiss the thought that the gentlemen who make such an assertion have mistaken the cases with moderate and even profuse intraperitoneal hemorrhage attended with symptoms of collapse for the class I have just described. My suspicions receive support when these gentlemen place cases with a haemoglobin of fifty-five and sixty-five per cent. into this class, in which the percentage of haemoglobin is usually less than
thirty per cent. or almost nil. Further support of suspicion is obtained from the statement that six such cases were met with in a total of twenty cases. This, no doubt, can be better understood when the writer states that during the past ten years he has operated upon eight-four cases, twenty of which were attended with copious intraperitoneal hemorrhage. Of these twenty cases in only six would he consider the hemorrhage was so great as to entitle them to be placed in the cataclysmic class. That the patients belonging to this class will often die, even if not operated upon, one has only to recall his own experience, or to glance through the literature for a single year.

The only case in my experience that died from intraperitoneal hemorrhage was the one which I did not operate upon, not being able to obtain consent until it was too late; while the other six cases operated upon immediately made prompt recoveries. I had only one death in the entire series of eighty-four cases, and that patient died three weeks after the operation from an ether pneumonia.

R. Werth, of Kiel, whom no one would accuse of not being conservative, says in this connection: "Operative gynecology has effected a genuine triumph in instituting an active treatment in the life threatening hemorrhages within the peritoneum consequent upon tubal rupture, more rarely on tubal abortion. Formerly we stood helpless in the face of such a catastrophe, and at least eighty per cent. of the victims succumbed to it." No one will deny that the patients rarely die from the first intraperitoneal hemorrhage, for the bleeding will generally cease when the heart’s action is greatly depressed, but the eroded vessels will begin to bleed again as soon as the heart regains some of its power. It requires but little extra loss of blood to extinguish the life of these patients. The question of shock, in these cases is, to my mind, a bugbear which we need not take into serious consideration. What would, we think, of an operator who would fear to reopen the abdomen to arrest a postoperative hemorrhage because the patient was in deep shock from just having been subjected to a serious and lengthy operation?

During the past two years I have encountered quite a number of cases of postoperative hemorrhage, and I feel that the lives of my patients were saved by my promptly reopening the abdomen and arresting the bleeding points. And I feel exactly the same way about my prompt action in the six cataclysmic cases of ectopic pregnancy that have occurred in my practice. I wish to add here, however, that I lay great stress in these cases upon an extraveneous saline infusion, expeditiously and skillfully given. I use the latter adjectives advisedly, for I have seen experienced and skillful surgeons make a sad botch of this apparently simple procedure and lose over it very valuable time during which the patient’s life had time to ebb away.

I was obliged to operate on one of the worst cases in my series at her home with only the kit of instruments for an ordinary curettage at hand. Although the abdominal wall was very thick and fat, there was primary union of the wound. But I feel that the patient would not have survived, were it not that Mount Sinai Hospital was close by, and I was able almost immediately to have a couple of internes come and administer an intravenoues saline infusion in either arm.

In summing up, I would say that in the vast majority of cases of
intraperitoneal hemorrhage from tubal rupture or abortion, it matters little whether we operate at once or defer operation for a few days. But in the class of cases termed cataclysmic immediate operation, with intravenous saline infusion by an experienced operator, will be attended with better results than when operation is deferred for days or weeks.—Surgery, Gynecology and Obstetrics. July, 1908.

Pathological Notes.

Under the charge James L. Maxwell, M.D.


Mr. Stephenson pointed out that females were more often affected than males, and that syphilis accounted for about two-thirds of all cases. Experimental evidence went to show that the disease was due to the presence in the parenchyma of the cornea of the causal agent of syphilis. The latency of the disease was to be explained by the diffusion of the organism known to occur in syphilitic babies. The spirochae ta pallida had been found in the seemingly healthy tissues of the eye in specific infants and foetuses. Interstitial keratitis was little influenced by the administration of specifics, but the author had found that atoxyl, given in conjunction with mercury, was a most efficacious remedy. Cases were quoted in which comparatively rapid cure had resulted from these means. He advocated the intra-muscular injection of doses of from .25 to .50 grams, that is, 3 3/4 to 7 3/4 grains, repeated once a week in mild cases and more frequently in serious and severe ones. Not more than six grams should be given in all; a course of twelve injections usually sufficed to cure, or almost cure all cases.—British Medical Journal, October 31st, 1908.

Some Experiments on Immunity against Vaccinia in Animals. By A. B. Green, M.A., M.D.

Hitherto all efforts to set up immunity against vaccinia in animals have been restricted to the vaccination of animals in the customary manner, or to the injection of vaccine lymph into them. In the present series of experiments an attempt was made to derive from calf vaccine an unorganised body capable of causing specific immunity against vaccinia in animals.

The method of production of such an immunisator has been:
1. Collection of vaccine pulp from a calf.
2. Trituration of this pulp with normal saline solution.
3. Heating this mixture at 60° C for 1 hour.
4. Storage of this mixture.
5. Filtration of this mixture.

The evidence afforded by a limited number of experiments points to the fact:
1. That it is possible to produce from calf vaccine a specific unorganised immunisator.
2. That this immunisator is of such a nature as to be capable of filtration through a Berkefeld V or a Chamberland filter, and possibly in some small degree through a Martin's gelatin filter.
Correspondence.

The fact that such an immunisator can be obtained, naturally suggests that it might be capable of setting up immunity against small-pox. It is evident that if an immunisator against small-pox could be prepared from calf vaccine, its use would lead, in all probability, to an appreciable gain in time in dealing with small-pox contacts. Usually, of course, such contacts are vaccinated, and when the vaccination is successful, an immunisator is manufactured in the vaccinated area of the patient, which immunisator is absorbed and gives rise to protection. If, however, the immunisator could be given directly to the contact, the time necessary for him to manufacture his own immunisator would be saved, and such gain in time might be important. Furthermore, the injection of the immunisator, if desired, be used in addition to, and not instead of, vaccination in these cases. The immunisator might also, possibly, be injected advantageously during the course of small-pox.

Until investigation on these lines is possible, other points in connection with the behaviour of the immunisator are being worked at.—Journal of Hygiene. September, 1908.

Correspondence.

BAPTIST MISSION HOUSE,
LONDON, January 2nd, 1909.

P. B. COUSLAND, Esq.,
Shanghai, China.

MY DEAR SIR: At the meeting of our Medical Mission Auxiliary Committee held last month I presented the resolutions passed by the Medical Missionary Association of China, which you had kindly forwarded to me as recommendations to the Home Boards. I have much pleasure now in conveying to you the cordial thanks of the Auxiliary Committee for these resolutions and to say that every one of them commend themselves very fully and heartily to the judgment of the committee. They fully recognise the importance of their medical missionary candidates having made a special study of tropical diseases, and as far as ever practicable all our candidates for foreign service will attend one or other of the schools of tropical medicines before sailing. As to the resolution in regard to the Chinese language, and the importance of medical missionaries obtaining a good knowledge of a written and spoken tongue, I need hardly say that that also meets with the unanimous approval of our committee, and their policy now and for the future will be practically along the lines which the resolution on that matter so wisely indicates.

In regard to the screening of Mission houses and hospitals, specially in malarial districts, the committee recognize the wisdom of that also, though happily I believe most of our work in China is not in districts where the need for this is as great as it is in some others.

The last resolution as to medical missionaries while on furlough being allowed to employ time for post graduate studies, funds being defrayed, the committee gladly recognise the immense value that
would mean to those engaged in this work, but their natural difficulty is as to how to fit that in between the rival claims of deputation work and offtime needed rest. Moreover the question of expense is not an avoidable difficulty in these days of trained missionary finance. The committee, however, will not lose sight of the importance of the resolution, and as far as they are able, seek to carry it into effect.

With kindest regards and with most cordial wishes for the success of the Medical Missionary Association of China,

Believe me, dear Mr. Cousland,
Yours most cordially,
R. FLETCHER MOORSHEAD,
Sec'y, MEDICAL MISSION AUXILIARY.

YUNG-CHUN, Feb. 4th, 1909.

MY DEAR DR. JEFFEYRIS: I find on looking over the Indices sent “Awfully Sorry,” with this issue of the JOURNAL that my poor brother has been extinguished!!!

The Mosquito Proofing of Private Dwellings.
Chronic Intussusception.
A Case of Pelvic Dermoid.

are all his and not mine. Will you kindly see that the mistake is corrected.

Kindest regards.
Yours sincerely,
J. PRESTON MAXWELL.

[The Editors are very sorry and will be good next time. Meanwhile hope for Dr. J. L. Maxwell’s forgiveness.]

Personal Record.

BIRTHS.

At Amoy, December 2nd, to Dr. and Mrs. C. E. Blair, L. M. S., Tingchow, a son.

At Peking, January 17th, to Dr. and Mrs. CHARLES W. YOUNG, A.B.C.F.M., a son (James Courteney).

At Wuchang, January 21st, 1909, to Dr. and Mrs. JOHN MACWILLIK, a son (Donald McGlashan).

At Hankow, January 23rd, to Dr. and Mrs. GILLISON, a son (Gordon Colebrook).

DEATHS.

At Farningham, England, November 21st, Dr. EDWARD G. HORDER, C. M. S., Pakhoi.

At Montreal, Canada, January, ALEXANDER GARTSHORE, second son of Dr. and Mrs. Percy C. Leslie, C. P. M., aged 4 years, from diphtheria.

DEPARTURES.

January 12th, Dr. and Mrs. W. F. SEYMOUR and daughter, for U. S. A.

January 27th, Dr. and Mrs. WITTENBERG and family, for Switzerland.

February 6th, Dr. and Mrs. ERNEST PEILL and child, for England.

February 26th, Dr. and Mrs. D. D. MAIN, for Scotland via Siberia.

March 1st, Dr. and Mrs. D. CHRISTIE and family, for Scotland via Siberia.

ARRIVALS.

January 3rd, Dr. and Mrs. P. L. MCALL and child, L. M. S., Hankow.