MEDICAL EXPERIENCES IN SOUTHERN HUNAN.

By Ernest C. Peake, M.B. (Edin.).

The need for a more careful study of the distribution of disease in the different parts of this great country has been recently emphasised in Jeffery's and Maxwell's new book, "The Diseases of China," and indeed it must often have impressed itself on the minds of medical practitioners working in the Far East.

It is inevitable in a country so vast as this, with such marked differences in the climatic conditions which obtain in its different sections, that there should be a corresponding variation in the disease incidence for each locality. But as yet the nosological picture is far from clear. Isolated reports, sometimes from very distant places, as to the existence of this or that morbid entity, or the breaking out of this or that epidemic, do, however, reach us from time to time, and thus as we piece the scattered fragments together, we find that chaos is gradually giving place to cosmos, and that a clearer idea of the geographical distribution of disease in China is being slowly evolved.

We have now, through the length and breadth of China, quite a little army of scientific practitioners of medicine. Taking us all in all, we may be said to represent the country fairly completely. It has occurred to me that if we could get a number of papers from men representing different parts of the Empire on the distribution of disease in their particular spheres of work, we should by this means arrive at a clear conception of the subject far more quickly than by the process of trying to connect together odd scraps of information, as we may happen to pick them up from time to time. (Such papers to be published in the CHINA MEDICAL JOURNAL.)

The following remarks which I shall make on the distribution of disease in the southern part of the province of Hunan, are based
on some ten years' experience of that region, and I offer them as a very humble contribution to the subject. No one can be more aware than I am myself, that this study is very far from being complete. There are many problems quite unsolved, and one lays no claim to finality. That, however, is no reason why the results of one's observations, as far as they go, should not be recorded from a part of China hitherto so little known to the medical world.

EYE DISEASES.

By far the largest proportion of the cases which present themselves at the out-patient clinic of our hospital at Hengchow, suffer from some affection of the eye.

I found, by reference to the out-patient register, that over twenty-two per cent. of the total cases seen come under this heading. It would be needless to try to enumerate the different conditions met with, for practically all kinds of ophthalmic disease are seen. Trachoma is common, and naturally, as a result of late cicatrisation, entropion is very common also. Entropion, by constant friction over the surface of the cornea and consequent opacity produced thereby, is responsible for a great deal of blindness. Affections of the conjunctiva and cornea are very common indeed. Corneal opacities, the result of previous ulceration, are met with constantly, and it is in these cases that an optical iridectomy will often give such satisfactory results. Cataract is fairly common. I have always operated for this by the extra-capsular method, i.e., by shelling the lens out of its capsule. It would be very interesting to hear from others who may have adopted the intracapsular form of operation. The common errors of refraction are frequently met with. But without dwelling longer on this class of case, I would simply state that the prevalence of eye troubles in Hengchow and district is truly appalling, and is the cause of much suffering and poverty. I think this remark would probably apply to most parts of China. Indeed, the amount of clinical material in this department of medical practice in this country is simply unlimited, and would certainly justify the establishment of a number of hospitals devoted to the treatment of eye affections alone. There could hardly be a more satisfactory branch of medical work in which to specialise, and to devote all one's energies.

SKINS.

Next in frequency to eye-cases, we get skin affections of one form or another, and ulcers of the leg. These latter are extremely common, and of all degrees of severity. Probably the majority of them are
syphilitic in origin, though many are due to traumatism, to local septic infection (kept up by dirt), or to varicose veins. Skin diseases bulk pretty largely in our clinics. Besides the conditions met with as a result of syphilis, or tubercular infiltration, we have the commoner affections, such as scabies, favus, furunculosis, eczema—in plenty. Ichthyosis I have seen, but not often, and tinea imbricata also, with its characteristic and unmistakable concentric marking well shown all over the body; but this last is certainly not common.

DIGESTIVE SYSTEM.

Very common indeed are disorders of digestion. One almost gets the impressedion sometimes that the Chinese all suffer from dyspepsia, more or less. We must all be familiar with the refrain "hsin-li puh-hao-koh," which, in nine cases out of ten, refers to stomachic trouble of one sort or another. Nor is this surprising when one considers the gross way in which the Chinese stuff themselves with rice, and the rate at which they feed. The marvel is that the human stomach can stand such treatment so long and so patiently. One cannot help being struck with the horrible state into which the alimentary canals of some of our poorer patients get from the ingestion of food of such a miserable quality that it is really unfit for human consumption. As a result we get chronic dyspepsia, diarrhoea, gastro-intestinal catarrh, dysentery, worms,—the picture is all too familiar, and I need not enlarge. I remember now the case of a small boy who, from poverty, had been reared on such wretched food that chronic gastro-intestinal catarrh had led to a certain degree of atrophy of the alimentary tract. Everything passed through the boy undigested. His anaemia was intense. He became dropsical, and so weak that we thought the end could not be far off. But after months of the most careful dieting in hospital, he gradually pulled round—and is now, I am glad to say, fat and flourishing.

RESPIRATORY SYSTEM.

Diseases of the respiratory apparatus are far from uncommon in our region. Bronchitis, acute and chronic, is very widespread in the cold weather. Nor is this surprising, for though we have, in common with the rest of the Yangtse Valley, very hot moist summers, we have also cold and damp winters. The spring months are as a rule very rainy, with cold north winds. The autumns are apt to be variable; sometimes there is much rain, though frequently we have long spells of lovely warm sunshine weather. Little children are frequently brought
to the dispensary suffering from acute capillary bronchitis. Asthma one meets with occasionally, pneumonia is not at all common. I am at a loss to account for its infrequency. We do get it, however. In the case of a slave girl who recently died in our Women's Hospital, pneumococci were easily and abundantly demonstrated in the sputum. Pleurisy is not common either, but as for tubercular disease of the lungs, it is appallingly prevalent. And this brings me to the whole question of:

Tuberculosis. Tubercular disease of the lungs, tubercular glands of the neck, tubercle attacking the joints and bones, tubercular lesions of the skin, tubercular meningitis, tubercle in one form or another is rampant in and around Fengchow. In adults, phthisis, phthisis laryngea, and glands; in children, cervical glands, joints, occasionally meninges. I recall now the case of a boy of eight who remained in hospital for several months with tubercular disease affecting both ankles, both knees, one wrist, and one elbow. Absolute rest was enjoined, and extension-apparatus, by means of weights and pulleys, applied to the lower limbs. He was carried daily on his bed into the open air, and fed up with milk, eggs, rice gruel, chicken tea, and cod liver oil. The result of months of this constitutional treatment was, in this child's case, very satisfactory indeed. Pain was relieved, the pulpy swelling of the joints gradually subsided, mobility returned—and, in a word, the boy is now running about.

Tuberculosis of the genito-urinary tract is not, in my experience, common among the Chinese. I have, however, recently had an advanced case of this trouble in my wards. The patient, a man of 27, arrived at the hospital in a miserable condition. He had been in a bad way for about two years with discharging tubercular sinuses in the right thigh. About six months previous to coming to hospital, the right inguinal glands became very swollen and painful, and the swelling then extended down the cord to the testicle. Three months later he began to have difficulty and straining in passing his motions. On examination I found the right testicle and epididymis both enlarged and hard, the latter tender on pressure. The cord was thickened and painful, and in the right groin was a huge mass of enlarged and very painful glands. Per rectum an enormous hard tumour could be felt through the anterior rectal wall, which was painful when pressed upon. The tumour, which I took to be prostatic, could only be touched from below—its upper limits could not be defined. It took up most of the rectal space, making it a difficult matter even to give the man an
enema, and this would account for the difficulty and straining complained of at stool. The right kidney was enlarged and palpable. There was also some pain and swelling in the left epididymis and vas, showing recent extension of the disease to the left side. The evening temperature was elevated several degrees, the morning being about normal or slightly sub-normal.

On April 26th, very severe hæmaturia set in. The hæmorrhage was very profuse, and the question was, where did it come from? Examination of the urine showed practically no pus. After standing, some clear urine was decanted, which turned solid on boiling. This heavy albuminuria obtained from the clear, practically bloodless and pusless urine, pointed unmistakeably to kidney disease, and made it probable, though not certain, that the hæmorrhage was of renal origin, and not from the bladder or any other part of the urinary tract. The next day microscopical examination of the urine revealed blood casts of the kidney tubules, thus confirming the renal origin of the hæmorrhage. The bleeding in this case was very persistent and required 6×30 gr. doses of calcium chloride before it could be controlled. In order to definitely establish the diagnosis of genito-urinary tuberculosis, I examined the urinary deposit microscopically for tubercle bacilli. There were found without difficulty by the usual method of staining with carbol-fuchsine, decolourising with acid, further decolourising with alcohol to eliminate smegma bacilli, and counter-staining with methylene blue. By using alcohol in order to decolourize any possible smegma bacilli one can spare the patient the suffering of catheterisation, which is apt to be very agonising in such cases. Thus we had here an undoubted case of genito-urinary tuberculosis, involving right testicle and epididymis, vas, inguinal glands, prostate, right kidney, left epididymis and vas. I mention this case fully as, in my experience they are not common, although other tubercular affections are very rife indeed. The experience of others, however, may not coincide with mine on this point.
CONSTITUTIONAL DISEASES.

There are certain constitutional conditions which I would group together, and which, with the exception of chronic rheumatism, are for the most part conspicuous by their absence.

_Chronic articular rheumatism_ is, as I have just indicated, a very common complaint in the out-patient clinic. _Lumbago_ and other forms of muscular rheumatism are also of very frequent occurrence. Occasionally one sees cases of _arthritis deformans_ (rheumatoid arthritis). I do not remember ever to have seen a case of _gout_. It may be that the diet of the ordinary Chinese does not favour this nutritional disorder; and alcoholism, the most potent factor in the etiology of the disease, is not a national weakness.

Another constitutional disease which may be mentioned in this category is _diabetes_. This, of course, is another nutritional trouble, and I mention it in passing because it too seems to be strangely absent. Then there is _rickets_. I only remember having seen one clear case of rickets in twelve years' practice in Hunan, and this seems strange when one has been accustomed to associate the disease with bad housing, lack of sunlight and pure air, faulty diet and so on. I should not have been surprised to find rickets in plenty among the children of China.

Though not strictly belonging to this same category, it might be convenient to note here the striking non-existence of _acute rheumatic fever_. I have never yet seen a case of it in the Hunanese, and it would be very interesting to know the experience of others on this point. Doubtless the absence of this trouble largely accounts for the comparative infrequency of _cardiac valvular lesions_. Some hold that rheumatic fever also stands in a causal relationship to _chorea_, and the complete absence, so far as I have observed, of this latter affection, would go towards substantiating this view. I mention these various points, for it seems to me that in summing up the disease incidence of a locality to note what is absent is as important as to note what is present, and it may be that in so doing we may get some side lights on the etiology of some of these affections. I hope to return to this topic later on.

VENEREAL DISEASES.

The extraordinary prevalence of _syphilis_ in all its stages and manifestations is enough to stagger one. What percentage of the population is affected I should not like to guess at, but it must be very high indeed. I see by the March number of the C. M. J. that Dobson, of the neighbouring province of Canton, is forced to the
calculation that seven-tenths of his patients suffer from the disease. Gonorrhoea is seen in the out-patient clinic, but not anything like so frequently as syphilis. That may be, however, because those suffering from this affection do not so often think it worth while coming for treatment.

But as for syphilis, so prevalent is the malady that one has always to keep its possibility in mind in dealing with the obscure cases of one kind and another that from time to time present themselves.

The manifestations of syphilis, especially in its primary and secondary stages, are usually clear enough; but in the tertiary period the symptoms may be by no means clear, and the diagnosis difficult. A case that I have now in mind will illustrate this. The patient, a man of about forty, was admitted into hospital suffering from very severe and persistent headaches. If I remembered rightly, the headaches were chiefly unilateral, and were at first taken for migraine. The nature of the case was not clear, however, and there was no real improvement in response to treatment. I cannot remember if vomiting was present, but I think not. However, ophthalmoscopic examination revealed optic neuritis, which was strongly suggestive of cerebral tumour. On the possibility that the tumour was gummatous (although there was no history of syphilis forthcoming), the patient was put on pot. iod., and rapidly improved. I must say, however, that organic tertiary lesions seem to me to be uncommon in the Chinese.

In country where syphilis is so rife, it is a wonder that one does not find the ultimate effects of the disease more frequently. One thinks particularly of some of the diseases of the blood vessels, e.g., the various forms of arterio sclerosis and aneurism. If these conditions are mainly due to syphilis, then we ought to see a good deal of them among the Chinese. Such, however, has not been our experience in Hunan. I can only remember with certainty having seen one case of aneurism. It was a popliteal aneurism, and was traumatic in origin. It would appear, therefore, that syphilis is not such an important factor in causing arterial degeneration as the text-book would have us believe, and I think this point was brought out by Hodge some years ago in the C. M. J.

There are other conditions which we have been accustomed to associate with syphilis. Take locomotor ataxia. Why do we not find more of this? Yet Osler, speaking of the etiology of this affection, says, “Of special causes syphilis is the most important,” and he quotes Mächius, who says, “The longer I reflect upon it, the more firmly I believe that tabes never originates without syphilis”. Take
also *dementia paralytica*. The same author discussing the causation of this condition, says, "As in tabes, the most important individual factor is syphilis." I think I have seen only one case of locomotor ataxia, but as the case was seen in the out-patient clinic long ago, and as I have no notes of it, I cannot be certain even of this. Dr. Hayward, however, tells me he has met with a case at Paoking, a city about 100 miles west of Hengchow. It would be interesting to know what others have found.

You will notice that it is precisely those conditions showing sclerotic changes, (conditions which we have been accustomed to regard us, for the most part, due to the later effects of syphilis), that we do not find among our Chinese patients. The conditions I refer to are *arteris sclerosis, cirrhosis of the internal organs, tabes dorsalis* (in which we have sclerosis of the posterior columns of the cord), and *dementia paralytica* (in which we have increase in the neuroglia, and various tissue-changes in the brain and spinal cord). How to account for this I know not.

It may be that in such conditions as *alcoholism, gout*, and *acute rheumatic fever*, we have more important factors in producing arterial degeneration than in syphilis, and as these conditions are rare in China, we thus get a corresponding rarity in arterial disease. It may be that in Western countries alcoholism first causes degeneration of the vessel walls, and the syphilitic virus acting on the degenerated walls produces endarteritis, arterio sclerosis, and aneurism. Or has the spirochaeta pallida, transmitted, in this country, through so many generations, come to be of a milder strain than it is, say, in Western lands, and thus is not so potent in producing the later results of the disease? These are some problems which, so far as I know, remain unsolved.

**GYNECOLOGY.**

Gynecological troubles are common enough. Berry Hart, in Edinburgh, used to talk of the "*Chronic infected case,*" the case which gives a history of white discharge, increased flow at the menstrual periods, and backache, dating from the last labour or abortion. Hart attributed these symptoms to septic infection occurring at labour from the endometrium or from cervical lacerations, giving rise to secondary inflammatory thickenings and endometritis. Bearing in mind the filthy environment in which labour takes place in the ordinary Chinese home, and the barbarous methods of native midwifery, it is no wonder if a fair proportion of cases become infected, and so suffer, in the way referred to, afterwards.
Owing to the fact that Chinese women rise very soon after labour (usually, I think, in a day or two), one would expect uterine displacements, subinvolution, and prolapsus uteri, to be very common indeed. These conditions do occur, of course, and yet I think they are not as common as we should expect if the text-books are right in stating that they frequently result from rising too early after labour. My gynecological experience, however, has been very limited, and it may easily be that the conditions referred to are much commoner than I think.

Major gynecological troubles, such as ovarian cysts, one meets with from time to time, but such cases do not often present themselves in the clinic, and still less frequently will they consent to come into hospital.

**MIDWIFERY.**

In a large city like Hengchow, with a population of 100 or perhaps 150 thousand people, difficult labour must be of fairly frequent occurrence. There being no lady doctor in our city, it has been my experience to be called in time and again to attend to some of the most desperate of these cases. Indeed it is only at the last gasp, when the poor woman has been in labour, or, I should say, has remained undelivered for days and is already exhausted, and the child, it may be, dead and decomposing, that the foreign doctor is sent for.

No wonder one's heart sinks when the call comes to “tsieh seng”, and it sinks still deeper when, entering the mud-hut among the rice fields, or the dark dilapidated city tenement, one is confronted by all the dirt and squalor, the inconvenience, the utter unfitness and unreadiness.

The wretched little apartment is of such flimsy construction that the numerous neighbours, knowing the foreign doctor has arrived on the scene, have plenty of opportunity for staring in through the crevices to see the fun. The patient lies on a rickety bed which takes up nearly all the available space. Perhaps a huge pig reclines on the damp mud floor in one corner, and chickens hop in and out. You look around despairingly, and ask for hot water. Hot water! That's the last thing they would have thought of, but they will get some. About ten or twelve ozs. of water, of a very dubious quality, is then put to boil in a small earthenware receptacle on the charcoal fire. By and by you get more and more water going. By and by you are able to turn your attention to the patient. By and by you can get hold of the husband, and select two or three women to help
you, shutting the others out as much as possible. Latterly I have had an assistant who could come with me and give chloroform, but in the early days I had to get any old "p'o-p'o" to hold the mask over the patient's face. It is under such like circumstances that prolonged and difficult obstetric operations, such as craniotomy, have to be performed. The marvel is how such cases will recover, and not succumb to septicemia. It would seem that owing to the filthy state in which the Chinese live, and their utter disregard of the laws of cleanliness and sanitation, they have acquired a certain degree of immunity from septic infection.

I regret that I have kept no record of these cases; and it is difficult now to recall particulars. In one of my early cases, said to have dragged on for ten days, and really dying when I saw her, I found on examination that a thick tough transverse septum intervened across the vagina, between the examining fingers and the foetal head.

In a transverse presentation, on one occasion, I found a prolapsed arm ruptured through the axilla and nearly torn off by the attempts that had been made to extract the child.

Craniotomy bulks largely in up-country midwifery practice in the patient's homes, where symphysiotomy and cæsarian section are practically ruled out. Failure to deliver with forceps, in a head presentation, is the usual precursor of craniotomy. Pure forceps cases I have not often had, though there have been several recently. One in the case of a woman whom I found in eclamptic convulsions (hence the reason for sending for me), and one in a primipara of forty-four. A primipara of forty-four is likely to be a pretty tough forceps case, as may be imagined.

One of my most recent cases, where I was called in, of course very much too late, was one of malaesceon pelvis. On examination I found that the pubic bones were so close together that I could only pass my forefinger up between them, which was then in contact with both bones at the same time; that is to say, the pubic arch was only about half an inch wide. Of course cesarian section was the only possible line of treatment, which, however, was declined.

May I add just one word in this connection, and that is to say that I have found the use of rubber gloves a great comfort and blessing, and I think they are a safeguard against infection in Chinese midwifery practice.

[To be Concluded.]
PNEUMONIC PLAGUE: PREVENTIVE MEASURES.

By R. A. P. Hill, M.B., Peking.

"The prime object of all Public Health work is to save life. This fact, though so obvious, is continually forgotten in practice, as for instance in the civilised world at large where much money and energy are spent on refinements of drainage and water supply systems, while tuberculosis is allowed to kill its tens of thousands almost unchecked. Secondly, it aims at attaining its end with the least possible interference with normal conditions of life. Some risks are too small to be worth dislocating trades or businesses to avoid them; this point also must never be overlooked. A quarantinist has no right at all to inflict severe losses of money or time on one section of the community to protect another from a problematical danger. In such conditions the burden of inconvenience should fall on the people protected if they wish to incur it."

For these reasons it is important to study the natural history of the disease one is dealing with, so as to know the danger points and to be able to gauge the importance of the various measures of protection. When staff and organization are complete and money abundant, of course it is a fairly simple matter to elaborate a complete scheme of isolation and disinfection. The recommendations of the Conference apply to such conditions; but it will be many years before they can be realised; and meanwhile the problem before us is how best to deal with an epidemic of pneumonic plague with a small staff and limited funds.

Two points emerge very clearly from the study of the past epidemic. One is that the disease was almost invariably caught from a patient. "Only one instance was adduced in which there was any degree of probability that clothing had conveyed it, and no example of infection from a house. On the other hand, many times patients' clothes and bedding were used immediately after death without any disinfection and with no ill result. So that although such mediate infection is still possible, and may have occurred more often than the statistics would show, still it is certain that this is a trifling source of danger compared with the living patient; and he who, with a limited staff, devoted time and energy to elaborate disinfections, while his isolation measures were still imperfect, would lose more lives than another man who, with the same staff, concentrated all on isolation and left disinfection to nature. Please observe, I am not saying
disinfection is unnecessary; only that if limited resources compel us to choose between neglect of isolation or of disinfection, then total neglect of disinfection should be chosen rather than defect in isolation."

The other, most important, point is this: that the patient invariably shows some symptom of illness some while before he becomes infectious. Not that he may not think himself perfectly well up to the moment of blood-spitting; nor, again, that plague can be diagnosed before the spit has appeared; but that a careful medical examination at short intervals would practically always detect some deviation from the normal,—a raised temperature or quickened pulse,—before the infectious stage. As a corollary of this follows the all-important fact, that the danger point of pneumonic plague is night-infection. If night-infection can be prevented the epidemic will stop in a week. Why is the night the time of danger? Simply because in the great majority of cases sickening in the daytime the patients' friends can recognise that he is ill before he is dangerous, and can protect themselves; but a man who went to bed at ten with a little quickening of the pulse and nothing else to excite the suspicion of the layman may have infected the whole k'ang full by two in the morning and be found dead when they woke.

Night infection must be stopped among the public and in the contact stations; among the public by house to house inspection, which for this purpose should be as late in the day as possible, even if much of the office business should have to be done by night and the bedtime transferred to the early morning, it would pay infinitely if every house could be inspected late. An untrained inspector, who could only spot people with coughs for the doctor to examine, would be better than nothing. In many places it would be possible to make a special night examination in the worst quarters, or in neighbourhoods where a crop of secondary cases was to be expected; for instance, the houses of a large courtyard from one of which a case had been removed three, four or five days before.

The night-inspection among the public has its disadvantages as well as its advantages; and it would be very much more effective if it were done as well as a morning inspection. This is not so impracticable as it may seem. This method of double inspection, morning and evening, should most certainly be applied to inns and to the contact station, and in most places it could be carried out in the worst section of the district. And it will be evident that, while increasing the work of one department, it will very materially lessen the work of others
and the expense of the whole campaign. For by this method the
great majority of cases isolated are still in the non-infectious, suspect
condition, and go to the suspect hospital, which must be enlarged
at the expense of the plague hospital. Now the stay of a suspect need
rarely exceed two days, and there is generally no necessity to isolate
the contacts of a suspect who is not infectious, nor need his house be
disinfection. Consequently there is an enormous reduction in the
number of contacts, staying a week each; a great saving in energy
and time and money spent on house disinfection; a much greater
willingness on the part of the public to cooperate when they know
that early detection will save them from being turned out of their
homes; and an abrupt end to the epidemic. I think ten days' con-
centration on double inspection would amply repay itself in every way.

In any case there can be no question that in the contact station
evening-inspection is exceedingly important. The statistics show
that a certain number of tertiary cases arise among the contacts;
I mean, that contacts developing plague infect others isolated with
them. The period of special danger is, of course, the end of the
incubation period, the fourth or fifth day as a rule (though at some
periods of the epidemic the third day was fairly common). Every
effort should be made to isolate contacts from one another on these
days, at least for the night, and on these days at least they should
be carefully inspected twice, if not three times. Contacts of other
days might be crowded up in order to thin out these, or vacant
room in the suspect hospital might be used. If double inspection
were in use in the infected area, the contact station would rapidly
assume manageable proportions; and here again, if nothing better
could be done, a coolie could go round at night to report a sound
of coughing in any wagon.

"There is one other measure that has suggested itself to me
as worth a trial. Everyone has been struck by the apparent natural
immunity of some people, and this has been vaguely ascribed to
opsonius, alexius and so on. But the postmortem done by the
Russians and Dr. Strong revealed another curious fact. In not one
of their cases was any other active lung disease found. Dr. Christie
also gave it as his impression that the healthy were more susceptible
than the weak. These facts may partly be due to the chief incidence
of the epidemic on the able-bodied coolies; but with so high a
phthisis rate as we have here, it seems rather strange that none
of the fifty examined had active phthisis. The two "immunes"
whom I met, on the other hand, both had chronic bronchial troubles,
and it occurred to me that possibly herein lay the explanation of some of these immunities. Dr. Strong showed that infection usually occurred at the bifurcation of the trachea or upper bronchial passages, Dr. Korelecha that it occasionally occurred at the tonsil. The bacillus would find little opportunity of lodging in bronchi continually coated with mucus which was constantly being coughed out. Would it not be worth while to imitate this in contacts recently exposed, by attempting to wash out their bronchi with expectorants or by the use of pilocarpine? It seems not improbable that this treatment would sensibly diminish the number of secondary cases.

"One recommendation of the conference I can only hope will never be put into practice, viz.: the universal masking of suspects. The suspect is isolated from everyone but the professional attendants, who themselves are masked. To them he is therefore very little dangerous. A certain proportion of the suspects are cases of pneumonia, bronchitis, phthisis, etc., for whom the respiratory embarrassment of masking would be the worst thing possible and a great discomfort. If doctors and nurses are going to endanger their patients' lives to protect themselves, and to neutralise their own carelessness, the profession has entered on a new and dishonorable phase."

The recognition of night-infection as the chief danger-point has another consequence worth mention. In the designing of quarantine stations (not contact-stations), on railways, provision should be made for passengers to sleep alone if possible. If they are inspected and found healthy in the morning, then the risk from free intercommunication by day is infinitesimal. Let space therefore be saved from dining rooms and courtyards and devoted to increased sleeping accommodation. The only reason for the existence of quarantine stations is the possibility that a passenger is incubating the disease; and if he develops it while another passenger is cooped up with him for the night that other man is almost bound to die too.

The disinfection of houses is a subject that needs a little consideration. The past epidemic has shown conclusively that house infection is a very small source of danger; yet, although no cases of infection could be traced to this, we must not conclude that there is no danger. We know it is theoretically possible for infected sputum to remain virulent for many days; and in a large epidemic, with multiple opportunities of infection for most cases, it is possible that house or clothing-infection may have occurred, but may have been masked by other more direct exposures. But we are fully justified
in concluding that, in comparison with the danger from an infective patient, the danger from a house is trifling, and that each day diminishes it. The logical consequence of this is that the energy spent on house disinfection should be reduced to a minimum until such time as isolation measures have been perfected. In extreme circumstances a week's airing after cleaning up gross contamination might be counted enough; and in the numerous cases where staff and money are insufficient to allow of spraying and swabbing, etc., the following simple method would be quite satisfactory.

Close the house till sputum droplets have had time to settle, (say six to twenty-four hours). Then, after cleaning up any lumps of sputum or blood on the k'ang or floor, light the k'ang fire and make the k'ang as hot as possible. Powder the floor with quicklime, and then moisten it with hot water. This method is simple, cheap and effective. One coolie could manage twenty or thirty houses a day. Lime is everywhere available, the patient's own coal can be used for the fire, and if there is a bar of wood in the k'ang, that too can be used. The gross contaminations can be burnt and water boiled on the spot. The coolie can prepare pailutzus at the contact station overnight and take them round on a barrow to the houses. Practically all the infection is on the k'ang, and two hours' good fire is certain to kill it off.

One other point in which energy should be economized, unless it is very abundant; the watching of city gates is practically useless. Systematic control of the inns would do much more good, and take much less time. This should be begun as soon as the city is threatened.

To pass for a few minutes to the other question, when isolation and quarantine should be enforced. In England the contacts of most infectious diseases are dealt with by "reception"; that is to say, they are received into isolation houses for the night, but, if healthy, allowed to go about their business by day. The rapid outset of symptoms and its deadly nature make pneumonic plague unsuitable for this very mild method, but still I think in exceptional instances, where the contact was thoroughly intelligent and trustworthy and under complete inspection and control, isolation by night supplemented by thorough inspection three times in the day, morning, midday and evening, might be sanctioned in lieu of isolation, even with so deadly a disease as this. "Such instances would be necessarily very rare; but, for example, if the servant of a decent European family in good position were to contract plague, I think it would suffice to insist that the family be
inspected morning, evening, and midday, and occupy separate bed-
rooms, and remain in their own house until after the morning inspec-
tion". It must, however, be clearly understood that such a relaxation
is only permissible on the understanding that the medical inspection
shall be thorough each time, and that the very slightest deviation from
the normal that could conceivably mean plague must be the signal for
complete isolation, no matter what other explanation may present
itself. Unless this is so, there is no alternative to complete isolation.

"As the probability of infection decreases, so the need for
isolation becomes less imperative. Thus, in the circumstances sug-
gested before, when a case has been found in one of several houses in
a courtyard; although isolation of all the inhabitants of that courtyard
would be desirable, yet in some districts this would mean a tremendous
overcrowding of the contact-station, with its attendant disadvantages.
In such cases, inspection of the inhabitants of the other houses would
be justifiable, with threat of isolation of the whole household if one
member were 'missing.'"

For contacts of a suspect, non-infectious case, isolation is not
necessary, with one exception. When two such suspects are found in
one house, there is a possibility that they have been infected by a
visitor to that house some days before; and therefore that other
inmates of the house may be incubating; "They should therefore be
isolated as well as the two suspects, until they have passed the limit
of incubation period, counting from the day of hypothetical exposure,
\textit{i.e.} three days before isolation began. They need only be isolated for
four or five days. Apart from these cases, inspection is enough."

Finally, when we come to cases in which exposure to infection—
that is, \textit{unprotected contact} with an infective patient—is not known to
have occurred, the need for isolation vanishes when inspection can be
substituted. In the large mass of railway travellers, especially coolies,
ispection is not yet practicable; but in the case of well-known
Europeans or Chinese officials and merchants of good standing it
would be quite enough. "Or again in the case of a large factory in
an infected region; if the employees can be properly inspected there
is no need to insist on closing the factory. The Russian day-school at
Harbin was not closed, but the scholars were carefully inspected, with
a satisfactory result." So too in the case of students returning to
mission schools from infected areas, there is no need to isolate them
from each other for a week. They should be isolated or thinned out as
far as possible for the night, and inspected each morning before they
are allowed to meet together. "If several \textit{must} sleep together addi-
tional safety is secured by using gauze nets round the beds; but any students who have had to sleep in inns within the infected area should not be allowed to share bedrooms with other students for a week."

It is unnecessary to elaborate the point further. Suffice it to say that isolation by night, or, failing that, good ventilation and airspace, obviates the chief danger even from a known contact; this with frequent efficient inspection by day renders him innocuous. By calculating up the probability of infection and the seriousness of the disaster should secondary cases occur one can form a judgement of the need of isolation in any given case; and this judgement it is the quarantinist's duty to act upon. "A private institution may impose any regulations it likes, provided that they do not involve graver risks or injuries to its inmates (for example, it is never justifiable to impose solitary confinement unless the risk is serious and the accommodation sufficient and healthy, and sufficient occupation can be supplied). But in an official capacity a quarantinist is morally bound to be guided by a fair estimate of the gravity of the risks. In Western countries the law protects the interests of trades and individuals against unduly strict regulations; and here we are morally bound to respect what the law protects elsewhere".

It may be added that it is the universal experience that excessive strictness defeats its own ends, as people are tempted to evade the rules.

The summary of this argument is just this. When supplies are sufficient you have an excellent model of complete administration in Fu Chia Tien; but to aim at copying that model with limited resources, is to court disaster. Bend all your energies to separating suspicious from healthy for the night; concentrate on the worst areas, on the danger-spots, the inns, on the danger-times, the evenings, on the danger centres, the living patients. And in quarantine measures reduce inconvenience to a minimum and temper zeal with, not mercy, but justice.

I feel I should almost apologise for occupying your time with such elementary considerations; yet the importance of the moral may be my excuse. I trust there may be no future outbreak of pneumonic plague and therefore that these notes may have no direct use; but the principle is applicable to all infectious disease. In control of epidemics we handle large interests and affect the welfare of hundreds or thousands. We may save more lives in a month than by a year of hospital practice; yet too many are content to ignore the whole subject until emergency arises, when they march forth, text-book in
hand, upon the foe. I maintain that a text-book without a careful and thoughtful application of it to the individual circumstances is a dangerous thing. What is needed is not completeness, but carefulness;—that "care," a mental process, not a mechanical one, be put into all that is done. This brings with it also "care" in the sense of anxiety, for it is a responsible and anxious business to form a judgement and act on it. The god of "text-book completeness" is kind to his worshippers; he soothes their worries, guards their reputations, and graciously accepts the human sacrifices they bring him.

And this is but an instance of a greater principle of life, that "He who reads very much in books will have the less time to think thereon," an old saying and full of truth.

THE USE OF CHROMOSANTONIN IN THE TREATMENT OF INTESTINAL AFFECTIONS OF THE TROPICS.


In the Medical Reports of the Chinese Maritime Customs for 1887, one of us (Begg) published an account of cases of chronic diarrhoea cured by the administration of santonin, and from time to time followed that paper up by others in various journals. Further experience made it clear that white or purified santonin was practically useless, and that the virtue of the drug lay in some change brought about by exposure to sunlight, or in some similar way. And it is well that this should be clearly borne in mind, as both of us have seen failures due to its being completely disregarded. Another point which should be borne in mind is that the chromosantonin is more efficient when administered in olive oil. For some reason not fully clear, it is not so efficacious when administered by itself; and in some cases, possibly due to rapidity of elimination, may fail of the desired result.

In this paper the action of the drug as a vermifuge or vermicide is deliberately excluded. It is true that one may meet with chronic diarrhoea due to the presence of the round worm, and that these cases are at once amenable to santonin treatment, but the chronic tropical diarrhoea which we are discussing is a more serious matter. In its most common form it is called "Sprue". Other cases simulate dysentery very closely, even if they be not caused by the known
agents, the Shiga bacillus or the amoeba histolytica; and a further
group are characterized by chronic diarrhoea of the sprue type but
unaccompanied by any mouth symptoms whatever.

We propose for clearness sake to divide our material into the
consideration of:

1. The nature of the drug.
2. Its use in "Sprue."
3. Its use in dysentery.
4. Its use in unclassified diarrhoeas.
5. The best method of administration, with hints on diet, etc.
6. A warning on the necessity of careful diagnosis and the treatment of
   complications.

THE NATURE OF THE DRUG.

Santonin (C₁₅H₁₈O₃), is a neutral crystalline principle extracted
from the unexpanded flower heads of Artemisia Maritima. Probably,
however, it is not truly neutral, but the anhydride of monobasic
santonic acid, and its formula C₁₅H₂₀O₄.

Its general characteristics are well-known and we need not discuss
them here. Suffice it to say that we have to deal with two substances,
both of which pass under the name of santonin.

The first is ordinary white santonin, which has been tried in the
treatment of the affections which we are now discussing, and found to
be useless or practically so.

The second is yellow santonin (Chromosantonin of Montemartini).*
It is prepared by exposing ordinary santonin to sunlight over a
considerable period, and that the yellow colour is not a mere colour
change is proved by the following points.

"There is no change in weight, but the derivatives are different,
the rotary powers are different, and the colour is different." If the
yellow santonin be dissolved in alcohol, and repeatedly re-crystallized,
it gradually passes back again into the white.

Chromosantonin is more readily oxidized, and the products of
oxidization are said by Montemartini to be different. Sestini† says
that the white santonin is changed into formic acid, an uncrystallisable
substance much more soluble in alcohol and ether than santonin
(photo santonic acid C₁₅H₂₇O₅), and a red resinous substance.

Both the white and the yellow undergo oxidation in the tissues,
and are excreted in the faeces and urine in several forms, two certainly
oxysantonins (Jaffe).‡
But little, however, is known of the process of oxidation. Under ordinary circumstances probably little is dissolved in the stomach. It may, however, in rare cases, be so rapidly absorbed as to be useless for the purpose of a vermifuge. The major part of the drug is absorbed from the intestine, and undoubtedly passes into the blood stream, as in large doses there is a marked influence on the cerebrum. It is certainly excreted by the kidneys, and possibly is re-excreted into the intestine. On the urinary passages it has some irritative action, and it may cause incontinence in children, and clinically in adults it may act as a diuretic, though Cusshuy* denies that there is any true diuretic action.

In large doses vision is markedly affected; first in the direction of bluish vision, followed by yellow vision, wherein everything white appears to be yellow; then there may be hallucinations of vision and confusion of speech, the sense of taste and smell may be deranged, and in rare instances, hearing likewise. As the effect of the drug passes off, there may be a period of violet vision.

All these effects may supervene on a medicinal dose.

Poisonous doses do not concern us, and it may be merely noted that there is a very marked cerebral disturbance in these cases.

The preparation of chromosantonin is not an easy matter. To get a really good specimen may need six months of sun in sub-tropical regions, and white santonin with a slight yellow tint is not chromosantonin, though it has, as we have already said, been used as such, with consequent disappointment at the failure to get the expected result.

ITS USE IN "SPRUE."

It is not our intention in this paper to deal with the diagnosis of "Sprue." Suffice it to say that the cases mentioned below presented the general characteristics of the disease, and had been definitely diagnosed as such and treated unsuccessfully by men who are authorities on Tropical Medicine.

Moreover, we have not the slightest doubt that in the cases quoted below, chromosantonin acted as the curative agent.

It will be noted that the ages of the patients vary greatly and that the cases are drawn from Peking, Foochow and Hongkong, thus covering both the north and the south of China.

1. Take first the case of a lady. Miss...... arrived in the Fukien Province in January, 1897, being then twenty-eight years of age. Save for occasional attacks of malaria, she was well till August

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1900, when she went home on furlough (her work having been closed owing to the Boxer rising). In the autumn of 1902 she returned to China, as far as she knew, in perfect health.

In April 1903 after a long and exhausting walk, she had an attack of nausea and diarrhoea. When that had passed, she was conscious that her appetite, which had not been over good for some time, was now nearly gone; she had a bad taste in the mouth; and she began to pass huge greyish stools. She was depressed and wretched.

In August 1903 she went to Foochow and was put on milk by her doctor. She was much troubled by abdominal distention, and the treatment with powdered cuttle-fish bone was adopted without any benefit. She returned to her own station not much improved. In April 1904 she had a severe exacerbation, and soreness of the mouth began. She returned to Foochow, where sprue was diagnosed, and she was sent up to the sanatorium at Kuliang, having a severe attack of tetany on the way.

In September 1904 she was decidedly worse, emaciated and depressed, and was sent home, leaving China in October 1904; it being supposed that the case was practically hopeless. The diagnosis was confirmed and she was carefully treated, being put on a milk diet. For two months she was up and down, getting gradually weaker, the mouth very sore and constant diarrhoea. For six weeks after this, she was kept in bed on strict milk diet, but still did not improve, and was so weak she could hardly stand.

In March, 1905, on the advice of a friend, she decided to consult one of us (Begg), but being unable to travel, she wrote to him. She procured the medicine he recommended, namely yellow santonin, and took it in doses of five grains night and morning in olive oil for a week, keeping on with her milk diet.

At the end of that week, though still very feeble, she was a new woman; the colour of the stools had changed for the better and the frothiness had disappeared. She gradually left off invalid diet. Subsequently, whenever she got chilled, she had small relapses. In May 1905 she was very much better, the final cure being hastened by iron and specially nourishing diet, and by the autumn she considered herself well.

She left again for her old station in August 1906 and in June 1910 I met her on her way home via Siberia for a three months' holiday. She was well, able to take any kind of food and not knocked up by any ordinary exertion. She is now back again at her station in South China.
2. Here is another lady. Miss..................returned to England from Hong Kong in August 1904 with "sprue", and very much run down in health. The diagnosis was confirmed in London and she was treated on the lines of the meat diet cure. This was kept up with slight alterations till May 1905, and it was thought that she was progressing favourably, though very slowly. In July 1905 she had a bad relapse and all the old symptoms returned. The diarrhoea was not severe, but she lost weight and the tongue was very sore. In September, 1905 she consulted one of us (Begg), and had a course of chromosantonin in olive oil, staying in bed for the week and keeping to her meat diet with a little milk pudding.

On the seventh day she was told to try ordinary diet and had bacon for breakfast, meat and blackberry and apple pudding for dinner, with no subsequent bad results. She never returned to invalid diet, though occasionally there was a little tendency to diarrhoea; she began to put on weight and steadily progressed, but had occasional slight attacks of soreness of tongue. She is now well, but still subject to slight soreness of tongue if for any reason her stomach gets seriously upset.

3. Take now the case of a gentleman. Mr. ..........., age sixty-eight at the present time. He went to China in 1865. In the year 1901 he began to have bowel trouble in Peking. In the beginning of 1902 his tongue and throat became very sore, but he still felt fairly well. The stools were light, irregular, half solid, half fluid, and frothy.

He came to England in April 1902 and went steadily down hill, a wreck of his former self by the autumn, pale and weary and mouth very sore. Stools about the same. He was under the care of several medical men, and in the beginning of 1903 was in the London Temperance Hospital for six weeks, leaving it much the same.

In the early autumn of 1903 he was again treated in London, and was put on strict milk diet, and then on milk and bananas. He improved a little, but the mouth was still very sore, he was not fit for any work, and the slightest variation of diet brought on the symptoms as severely as before. He put on some flesh on seven pints of milk a day and the bananas.

After eleven months of this diet, he was very much disheartened, and about June 1904 he consulted one of us (Begg). He had the usual course, preceded by castor oil, and fearing lest he had not taken it thoroughly went on for sixteen days.
He noticed first an immediate improvement in his general condition, feeling at the end of the course like a new man, and second that the stools had become altogether formed and had lost their frothy nature.

Fearing to damage the good effect, he kept to milk and bananas for some time longer, and then gradually resumed ordinary diet. A short time after he stopped the yellow santonin, he was alarmed by large pieces of mucus coming away with the stools, but this rapidly ceased. The tongue began to improve at once under the yellow santonin, and was quite well in a comparatively short time. There has been no relapse of the mouth. On two occasions the bowels have been out of order and have promptly been put straight by a few doses of yellow santonin.

He now looks well and is in active work, though he does not think his old vigour has been regained; a great portion of this, however, may be due to advancing age.

These three cases are brought forward by one of us (Maxwell) to whom the patients are well-known. Space alone prevents a long list of similar cases being given by one of us (Begg) who has had wide experience of this class of case. These three cases may be taken as typical of the action of the drug in this affection. And not only is the China form of "sprue" amenable to this treatment but cases of Hill diarrhoea of India, of Ceylon sore mouth; cases also which have developed in Burma or in the Straits Settlements or by the Congo, and one case from Morocco, have yielded to the same treatment.

It must be borne in mind that no treatment will cure a severe and longstanding case of sprue where the mucous membrane of the bowel has been already largely destroyed, though even in these cases chromosantonin may improve the patient's condition.

If the drug does what one claims for it, it should cure (a) early cases; (b) relapses.

(a). Here is the story of an early case:—Miss ............., a lady about thirty years of age, came out to the Fukien Province, South China, in the spring of 1906. Within three months of her arrival she began to suffer from an early morning diarrhoea, sometimes having to go to stool two to six times before 9 a.m., after which time she was free for the rest of the day. The stools were full of bile and there was much fermentation and flatus.

One of us (Maxwell) tried, first, ordinary remedies, including intestinal antiseptics, with the result that the patient was decidedly worse at the end of three weeks. She was then placed on yellow santonin gr. v. in olive oil twice daily, and was well in a week and remained...
in the East without any further trouble of this kind for four years, when she had to be invalided home for a general breakdown due to unsuitable and exhausting work. She has just returned again to China.

Here is another early case:—Mrs. .........., a lady of thirty-three, was confined of her second child in May, 1909. The puerperium was normal, but as soon as she began to get about again, she commenced to suffer from a sore mouth with swollen tongue, typical of the early stage of sprue, irregularity of the bowels, and great depression. She was at once put on yellow santonin gr. v. twice a day, without the olive oil, and speedily recovered health, the mouth improving at once under the treatment. She had no return of the sore mouth, and went home on furlough in June 1910, in good health, having been 6½ years in the East and expecting to return to China next year.

In neither of these cases was there any restriction placed on the diet, save that in the first case the patient was carefully dieted during the unsuccessful three weeks treatment with ordinary remedies.

(b). Let us look now at relapses:—Mrs. .........., age thirty-five at the time of her illness, was invalided home in February, 1903, from Amoy, South China, with a serious attack of sprue. Under a course of treatment with meat and milk diets, the disease was gradually overcome and she recovered a measure of health. In October, 1904, she returned with her husband to China. At this time there were many slight attacks of sore tongue and mouth, and marked tendency to diarrhoea. One day a week she spent in bed. Later on she took a course of yellow santonin which undoubtedly materially aided her ultimate recovery. The slight relapses gradually became fewer, though after the birth of a child at term in 1908 there was a distinct attempt at a serious relapse, promptly checked by castor oil and yellow santonin. She is now in perfect health, able to eat any food with impunity, to go out freely, and may be considered cured. Had she been treated with yellow santonin in the earlier stages, the duration of the disease would almost certainly have been much shortened. Before leaving China she had been on milk diet and treated with cuttle-fish bone without benefit.

Cases of "sprue" amongst the Chinese are very rare, and we have no experience of the effect of the drug in these cases, but one of us (Maxwell) found that the drug effected a rapid and lasting cure in a case of typical hill diarrhoea in a Chinaman. And we believe that the drug may be found efficacious in this class of cases as well as in true cases of "sprue."
The Use of Chromosantonin.

ITS USE IN DYSENTERY.

Take first an illustrative case:—Mr. J. I. S., a gentleman in the late fifties, acquired dysentery in Peru when twenty-six years old. He had several severe attacks. About 1906 he began to suffer again from it, passing at first a good deal of blood and mucus, and he was under treatment for about a year, with the result that the blood ceased but the other symptoms did not improve much, and he was an almost complete invalid. We quote from a letter of Dr. Blake of West Wickham, England, under whose care he was at the time. "He was examined with the sigmoidoscope, and as the sigmoid in his case had a mesenteric fold we were able to see well up and see the healthy bowel above the inflamed area, which was covered with minute ulcers. We found a certain amount of benefit from a decoction of simaruba and cinnamon bark, but the yellow santonin was what cured the condition, in gr. v. doses twice daily; the foetor disappeared after two days, and the pain and tenesmus rapidly disappeared."

The patient told one of us (Maxwell) that he was a new man at the end of a week of the yellow santonin treatment, and that the sense of bien-être was very marked. The drug, which had been prepared by Dr. Maxwell (late of Formosa) in Bromley, Kent, was reduced after the first few doses to 2½ grains, as the 5 grain doses were too strong for the patient. He has remained well since that date.

After a paper by one of us (Begg) in the Journal of the Army Medical Corps in 1905 on this subject, the subject was taken up by others, and the following is their experience in epidemic seasons. In 1907 Dr. Drake of Assam treated every alternate case with chromosantonin and the others in the usual way. In Estate A the number of days to effect a cure by yellow santonin was 6.58 and the deaths were 3, under the other the days were 13.1 and the deaths 13.

In Estate B, where he notes that the type of case during the experiment was especially bad, the number of days under treatment by yellow santonin was 9, with no deaths; under other treatment the number of days was 30, with 2 deaths.

In 1908 Dr. Brunivin of Fiji, although he cannot give as startling statistics, reports fewer deaths and quicker recoveries, and states that he is so satisfied with his results that he will continue to use it in preference to any other treatment.

One of us (Maxwell) has used the drug fairly extensively in the treatment of chronic dysentery amongst Chinese patients. As far as results at present go it seems to be useless for chronic amoebic dysen-
tery, but to act marvellously on some cases of dysentery of unknown origin, probably bacillary. Begg in England believes it to be even more successful in chronic dysentery than in chronic sprue.

**ITS USE IN UNCLASSIFIED DIARRHOEAS.**

This section is very difficult to separate from the preceding one and might almost be included under it. There is no doubt of the beneficial action of chromosantonin in fermentative diarrhoea. An ordinary attack of this class with foul fermenting stools may be sometimes completely cured by a few doses of the drug, and in this connection the following case is remarkable:

Major Lyle Cummins at the discussion on Chromosantonin at the Society of Tropical Medicine and Hygiene, London, April, 1911, spoke as follows:

"I should like to give my experience of the use of santonin in a country where there is no sprue. It was in connection with a case of chronic diarrhoea which had lasted for 9 years. The patient was an Egyptian interpreter in the War Office service. The case came under my observation in 1904 (the attack being then 8 years old), and I treated the case in hospital for 24 days, but I failed utterly to cure him. In 1905 I saw Dr. Begg's article in the Journal of the Royal Army Medical Corps, and I sent for the patient and advised him to come into hospital again. He had not a sore mouth or an inflamed tongue, but in other respects the condition was closely analogous to sprue. He had diarrhoea, chiefly confined to the morning; from 5 a.m. to 9 a.m. a very large number of stools, but for the rest of the day it was not so bad—in all about 20 stools a day at the time of admission to hospital. His weight was down to 100 lbs. (originally it had been 135 lbs). I started off with five grains of santonin (chromosantonin) twice a day in cachets. It had a most marvellous effect. On the first day of treatment there were 19 stools, on the second day 16; on the third day they had fallen to 4 and after the third day they became normal. I gave the santonin for a week with milk diet and at the end of the week put him on ordinary diet. The result was a permanent cure."

**THE METHOD OF ADMINISTRATION.**

For the benefit of those who wish to prepare their own chromosantonin, we would like to insist that it be properly prepared. The white santonin in the *crystalline* form should be spread out on a plate or in a Petri capsule in the sun, till on breaking a crystal no white appears in the centre of the crystal. This may take a fortnight to six months in tropical and subtropical regions, the time varying with the amount of sun and the duration of exposure daily. Powdered santonin is not so good, possibly because in its powdered state it is more quickly absorbed and eliminated. Begg thinks that the crystals may pass further down the bowel before being absorbed, and that thus the action on the bowel is wider spread. For adults the dose is five grains morning and evening, mixed up in a small tea-spoonful of good olive oil. This should be taken for a week. Almond oil or castor oil may be used
The Use of Chromosantonin.

383

as an alternative. The drug may be administered in gelatine capsules, but keratine coated capsules are unsafe owing to the acid reaction present in the small intestine, which may prevent their solution. But there is little doubt that the drug administered in oil is superior and the safest plan.

As to diet, there is a distinct advantage to be gained from a light diet. It need not be purely milk, but if the patient be much reduced, the week of treatment should be spent in bed. At the end of this time a return is to be made to ordinary diet, and should this cause a little ordinary diarrhoea, the latter may be disregarded. Good nourishing food should be taken, and if the patient, as is likely, be very anaemic, the administration of iron or arsenic and iron is an advantage. Intramuscular injections of arseniate of iron are very good. In some cases, however, one of us (Begg) has found iron harmful. It may be noted here that slight attacks of soreness of tongue may occur for many months after the patient is apparently well. Such attacks should not alarm the patient.

Under ordinary circumstances, patients should be sent home, if possible, for a rest and change, but there is no reason why in the majority of cases a return should not be made to the tropics or sub-tropical regions.

And it must be remembered that a person may reacquire the disease. In this case the same treatment should be adopted, though it should be a matter for careful consideration whether such a patient should not leave the tropics or endemic area altogether.

Finally we wish to warn our readers against carelessness in diagnosis.

Chromosantonin will not cure chronic appendicitis, it will not cure advanced cases of pancreatitis, and it will not cure new growths in the abdomen.

Every patient ought to be carefully examined in bed; a stool passed separate from the urine should be tested as to its reaction. If alkaline, it is unlikely that chromosantonin will be of use, and the disease is certainly not sprue.

And it is of importance that these chronic tropical diarrhoeas should be attacked at the outset. Diarrhoea in the tropics can or should never be treated as a light thing, and in any case which fails to yield to ordinary remedies, the question of the case being one of those to which we refer in this paper should be borne in mind, and chromosantonin should not be, as it has been very often in the past, the refuge of the destitute.
The China Medical Journal.

CLINICAL CASES.

By WALTER PHILLIPS, M.B., Newchwang.

I. CONGENITAL HERNIA IN CHILDREN.

In text-books of surgery it is taught that nearly all cases of hernia in infants may, if taken in time, be cured by truss pressure. If the rupture can be kept up for a certain number of months, adhesions form in the canal, and the rapid growth of the parts secures its practical obliteration. The hernia must not be allowed to come down even once. If it do, all good is lost.

In China, however, mothers lack the necessary intelligence and patience required for this form of treatment. The writer is convinced that here the only treatment is operation.

The operation is easy, and may be performed at any age; but three to four months is the most convenient. It consists in an incision along the sac, which is opened and the bowel reduced. The entire sac is removed, merely leaving a little to cover the testicle, and its neck tied at the level of the internal ring. For this purpose the external oblique may be split, and afterwards united with catgut to Poupart's ligament. No regularly performed radical cure is necessary; the parts are rapidly growing, and so long as there is no sac and its contents to keep it open, the canal assumes its normal relations.

A difficulty may arise with the cord, which is sometimes spread out over the sac. If it be impossible to separate the cord at the neck without injury, the sac may be ligatured by picking up its folds on its inner aspect with a needle threaded with catgut, rucking it; the two ends of the suture may then be passed round the rest of the sac which is not engaged in the cord. Care of course must be taken not to strangulate the cord either here or in sewing up the external oblique.

Asepsis is readily secured with spirit and tincture of iodine, especially if care be taken to temporarily fasten the prepuce with a suture to the skin of the opposite thigh before beginning to operate. Beyond a strip of gauze fastened on with collodion no dressing is required. For twenty-four hours it is well to keep the little patient lying down. After this it may be nursed as usual.

These points are illustrated in the following case: A male child, one month old, was brought to the writer with a large but readily reducible left inguinal hernia. The mother was advised to present it again in three months. Two and a half months later the child was brought looking very ill, with a history of vomiting and complete
obstruction for seven days, with retention of urine for twenty-four hours. The scrotum was large and oedematous and occupied by a firm boggy mass, taken to be strangulated omentum. Two hours later under chloroform, the skin having been cleaned with spirit and rubbed with tincture of iodine, an incision 2½ inches long was made over the sac. The constriction was found to lie in the tissues outside the neck. On opening the sac, the gut was found full of hard faeces, but in good condition. After some difficulty owing to the faecal contents, the gut was reduced, the sac wholly removed, and ligatured at the internal ring. The external oblique which had been split, was sutured with catgut to Poupart's ligament. The skin wound was then closed with a continuous horse-hair suture, and a little gauze applied with collodion. The child passed urine under the anaesthetic, and the bowels acted three times that night. The sutures were removed on the eighth day. Recovery was uneventful, and the hernia has not recurred.

An interesting point is the length of time obstruction had lasted, and the large amount of faeces in the obstructed loop. It is probable that obstruction was due more to faecal impaction than to any constriction existing.

2. PROLAPSE OF THE RECTUM IN CHILDREN.

The treatment of this condition in ordinary cases resolves itself into the reduction of the prolapse and the prevention of its recurrence. Reduction is usually easy, and except in very slight cases is best done under an anaesthetic.

To prevent recurrence, treatment of diarrhoea and straining, tonics, and the passing of the motions with the child lying on its side, the buttocks being supported by the mother's hand, are usually sufficient. If not, artificial contraction of the anus may be brought about by scarring the rectal mucous membrane with strong acids or actual cautery. The writer has tried the latter in two or three cases, with satisfactory results. Five or six lines parallel to the axis of the bowel should be drawn on the prolapsed bowel with a cautery at dull red heat. A little ointment is applied, and the prolapse returned. Opium should be given for three or four days to confine the bowels, which may then be opened by a glycerine enema.

Cautley, "Diseases of Children" (1910), says: "Irreducible prolapse is so rare that excision need only be mentioned." The following case of complete irreducible prolapse is therefore of interest:

A child two and a half years old was brought to the writer with the history that the "kang men" had been down for a week. A
sausage-shaped tumor, three inches long, contracted at either end, deeply congested, oedematous and ulcerated, projected from the anus. The lower pole, from which came a little mucous and fecal matter, was gangrenous, black, dry and hard. A diagnosis of complete prolapse was made. An attempt to reduce it not unnaturally failed.

A day or two later, therefore, (the mother having scruples against operation at first), after preparation with castor oil and soap and water enema, the whole mass was excised. Under chloroform, in the lithotomy position with buttocks raised, the prolapse was as far as possible disinfected, and an incision made all round at the junction of the anal skin and mucous membrane. This was deepened and the peritoneum opened, at first in front, then all round. There was no small intestine in the prolapse, a contingency that has to be guarded against. The bowel was then drawn gently downwards, and the parietal peritoneum sutured to the wall of the bowel with catgut. This done, the bowel was divided with scissors. To prevent hemorrhage, after each snip, the divided mucous membrane was sutured to the cut anal margin. The bleeding was slight, except behind. When completed, some ung. iodoform was applied, and the row of sutures returned inside the anus. A suppository of morphia, gr. ⅕, was inserted, and a pad and bandage applied. The child was very restless for 24 hours. On the third day the bowels acted. For some days there was a slight mucous discharge, but on the eighth or ninth day union was complete, and the child was sent home.

Seen some months later for another complaint, control of the bowel was complete, and there was only a slight stricture, which might have been obviated by regular digital dilatation, which the mother had, though directed, failed to carry out.

3. THE SURGICAL TREATMENT OF HYDROCEPHALUS.

In May 1910 the writer saw a child 18 months old suffering from meningitis. There was fever, vomiting, retraction of the head, constant tossing, moaning, etc., with an occasional hydrocephalic cry, and convulsions. Chloral and potass. bromide were prescribed, and a bad prognosis given.

A month or so later the child was brought to hospital, with the history that since getting over the former attack, the head had rapidly increased in size.

The child was wasted, with marked hydrocephalus. The sutures had opened, and there were still daily convulsions. Though semi-conscious, it took food fairly well.
Under chloroform, an incision was made over the left lateral fontanelle, and a flat of skin scalp and cranial membrane turned down. The dura mater, which bulged and did not pulsate, was opened. A small trocar was then thrust into the lateral ventricle; cerebro-spinal fluid, under pressure, at once commenced to flow. The trocar was withdrawn, and through its track 3 or 4 strands of catgut were introduced into the ventricle by means of a fine sinus forceps. The free ends of the strands, about an inch in length, were then pushed down between the membranes and the brain, in the hope that a permanent drain would be established into the arachnoid space. The dura was then closed with catgut and the skin sutured.

Five days later there had been no more fits, the child was visibly better, and the circumference of the head at least two inches less. The skin had healed, but there was bogginess of the tissues around the wound, pointing to leakage through the dura. More attention should evidently have been paid to the closing of the latter.

Progress was maintained for some days, the child keeping brighter and the size of the head decreasing, till the mother ceased to attend. Later the writer was informed that after a succession of fits, the child had died suddenly.

As far as it went, the result of the operation was encouraging. It seems more suitable, however, for less acute cases. In this patient, with so much secretion of fluid, there was probably some arachnoiditis, leading to increased flow from the choroid plexus.

4. ENTROPION FOLLOWING TRACHOMA.

For the treatment of this, in China one of the commonest eye affections calling for surgical interference, numerous operations have been recommended. It would be interesting to have an expression of opinion as to what is the best procedure to adopt. The older surgeons appear to have been content simply to split the lid margin; some in addition excised a portion of skin from the lid above. This leads to rapid and aggravated recurrence.

From inquiries made, it would appear that at present, at any rate among British surgeons, the most popular proceeding is to split the margin and transplant into the gap so formed a strip of buccal mucous membrane. This certainly raises the lashes out of harm's way, but the deformity of the lid remains uncorrected.

In the ideal operation, the points that count are complete correction of the deformity of the lid, which is primarily in the tarsus, permanent results, ease and rapidity of performance, with the loss of
as little tissue as is necessary. These points seem to be met to a considerable extent by the following modification of Snellen's operation, which the writer has employed exclusively for some time past.

It is well to begin by dropping cocaine into the eye. After application of Snellen's clamp, cocaine is injected into the lid till it is tense. A semi-lunar area of skin is then marked out from the lid, the lower straight incision being parallel to the ciliary margin, at a distance of about a quarter of an inch from it, and the upper curved one, varying in height according to the amount of redundant skin requiring removal, meeting it at each angle. This area of skin, together with the muscle fibres underlying it, is removed, in such fashion that the lower incision goes almost vertically down to the cartilage, and the upper converges rapidly as it is deepened to meet the first on the surface of the cartilage. The tarsus is then cleared sufficiently to allow of making two incisions along its whole length into the cartilage, ⅓ of an inch or more apart and parallel to the ciliary margin. These incisions should approach each other as they deepen, so as to meet on the conjunctival surface of the cartilage. The strip so marked out, wedge-shaped in section, is grasped in toothed forceps and removed, leaving a trough or trench completely dividing the tarsus into upper and lower portions. This trench being wide superficially, with sloping sides that meet on the conjunctiva, permits of the straightening out of the incurved tarsus. If the conjunctiva happen to be divided in making this groove, no harm results. Three sutures of fine silk with long ends are then inserted through the upper margin of the tarsus, one in the middle, and one at each side. The two free ends of each are passed through the lower lip of the wound, behind the skin and muscle and in front of the cartilage, and brought out to the lid margin, a few lines apart. A small section of rubber tubing is then slipped over one free end of each suture, which is loosely knotted over it, so that the rubber ring lies on the lid margin. The clamp is then removed, and the sutures tightened and tied over the rubber rings, leaving their ends long. The sides of the groove are thus brought into contact, the lid straightened out, and the lashes carried up well clear of the cornea. The direction of the lashes depends on the width of the groove in the tarsus. No sutures are inserted in the skin. A little iodoform ointment is applied and the long ends of the sutures turned up over the forehead, where they are secured by a small piece of strapping. The eye is covered with a scrap of gauze and a pad of wool and
TUMOR OF THE MESENTERY.

By G. Wilkinson, Foochow.

Tumors in mesentery considered generally. Information taken from abdominal surgery by Greig Smith (copy not quite up-to-date).

Division into (1). Solid Tumors; (2). Cysts.

SOLID TUMORS.

Sir Spencer Wells in 1882 operated on solid growth of mesentery, about the size of a child's head, successfully removing it by enucleation. It originated in the cellular tissue at the root of the mesentery, but the nature of the growth was not recorded.
Dr. Brookhouse of Nottingham recorded an operation on a case of fibroid tumor of mesentery weighing 13 1/4 lbs, in which death followed removal.

Terrillon successfully removed by enucleation, from between the layers of the mesentery, a lipoma weighing 57 lbs.

Homans of Boston has recorded two cases of removal of enormous retro-peritoneal fatty tumors of abdomen which may originally have been mesenteric. The first case was that of a man, age 39, whose girth at the umbilicus was 42 3/4 in. The tumor felt so fluctuating in parts that it was punctured several times in the expectation of finding fluid. The first attempt to remove failed, but a second and successful attempt was made some months later. The operation was one long and tedious process of enucleation from behind peritoneum and bowels. The patient sank from shock. The second case was a woman of sixty, similar to the first, who also died of shock.

Cooper Forster in 1868 showed at Pathological Society an enormous fatty tumor removed from a woman after death, which had features in common with those described by Homans. Three other cases have been described in the Pathological Society's transactions.

A similar case is said by Homans to have occurred in the practice of Professor Calvin Ellis of Harvard University. A few more cases, not bringing out any new facts, have also been recorded.

From the above information it would seem that solid mesenteric tumors, as far as definitely ascertained, consist of fibromata or lipomata.

**CYSTS.**

Cysts of mesentery have been divided into five classes as follows:

(a). Traumatic (from rupture of blood-vessel between layers of mesentery).
(b). Lymphatic (containing chyle).
(c). Congenital or dermoid.
(d). Parasitic or hydatid.
(e). Cysts forcing their way between the layers of the mesentery from neighbouring organs.

**Operation on Cysts.**

Excirpation in 20 cases with 8 deaths. Incision and drainage in 24 cases with 2 deaths and 1 recurrence requiring subsequent removal. Section of parietes, fluid removed by aspiration, cyst-opening attached to edge of parietal incision by continuous suture, large rubber tube fitting well into opening of cyst.
Illustrative Case. Comes under category of solid tumors. Siá Ak-die, male, age 22, Standard Oil employee, admitted on June 10th with abdominal swelling and mass of glands above left clavicle.

Family History. Father died of fever. Says that mother died of consumption. One sister died shortly after child-birth and had a cough.

History of Disease taken on June 26th. Three months ago began to be affected with pain in each loin and on this account about ten days later had to cease work. After another ten days there was considerable abdominal distension and patient vomited after everything he took, even after tea; the vomit on one or two occasions being of a faecal character. Bowels to begin with were not opened for seven days and up to the present have not been anything like regular except with the use of an aperient. Mass of glands above left clavicle of somewhat over a month's duration.

Physical Examination. After relieving distension of abdomen with mild aperients, a firm nodular mass is felt occupying mainly the upper left quarter of the abdomen, fairly movable and movement gives rise to pain. The upper border is roughly on the level of a horizontal line joining the lower border of the thorax on each side and extends in width from a vertical line drawn through the nipple on the left side to slightly beyond the middle line of the right. The lower border is a little below the level of the umbilicus. There is a complete area of resonance round the tumor.

There was oedema of legs when patient came into hospital, but this soon disappeared almost entirely, with rest and aperients.

The glandular mass above left clavicle is about the size of a large egg, and the individual glands can without difficulty be made out. Heart, liver, and spleen, normal.

Lungs normal, with exception that percussion note is not quite so good behind on right side as on the left and a few crepitations are heard at about the level of middle of posterior border of scapula, near to the spinal column.

Urine contains a trace of albumen.

Patient can take eggs and milk without trouble.

Operation. June 29th, 10 a.m., assisted by Dr. Moorhead, under chloroform, vertical incision near the outer border of left rectus muscle, five or six inches in length and reaching an inch or two below umbilicus. On dividing the muscle the peritoneum is seen and under it the tumor moving to and fro with respiration. On division of parietal peritoneum the glistening peritoneal covered surface of tumor freely striated with blood-vessels came into view. It has a semi-fluctuating consistence and
appears to be bordered at the extremities on all sides by intestine. The attenuated omentum is seen in the upper part of the wound, but the transverse colon cannot be seen. On puncture of tumor with a small syringe a small quantity of sanguineous fluid issued. No medium-sized trocar being handy a superficial puncture was made with Spencer Wells' trocar. No fluid came through the tube, but on withdrawal a few ounces of sanguineous fluid flowed out. On introducing finger the interior of tumor is ascertained to consist of soft pulpy material. As removal seemed hopeless, the surface rents made with trocars were sutured with continuous suture and skin wound closed.

There was considerable shock after operation, and after an hour, as patient was inclined to be restless and complained of pain, an injection of morphia (gr. $\frac{1}{4}$) was given. Several hours of sleep followed, but at 8 p.m., although hands were a shade warmer, feet still continued cold. Patient has had a few spoonfuls of congee mixed with milk. 10 p.m. enema consisting of saline solution oz. xvi and brandy oz. ii, given. This roused patient somewhat and he was able to take a few teaspoonfuls of milk and congee. There is evident pain in swallowing.

June 30, 2 a.m. Patient had enema of beef juice and brandy and took a little milk and congee by the mouth.

6 a.m. Pulse very weak, extremities cold and clammy, injection of strychnine and enema of saline, beef juice and brandy given without beneficial result. Patient gradually sank.

With regard to nature of tumor one would judge from rapid growth, consistence of tumor and glandular infection, that it is of a soft malignant nature.

With regard to removal of tumor itself, enucleation was out of the question, and removal of tumor with a corresponding length of intestine equally so, on account of patient having so little reserve of strength.

**ABSCESS OF THE SPLEEN.**

Patient, a young man, age 21, came into hospital on January 25th of this year.

*History.* For last six years has had malaria frequently, the attacks occurring every three days or every day, the last attack three months ago. Over three weeks ago began to have pain at a spot on the left side of the abdomen, on a level with the umbilicus and midway between it and the left loin.

*Examination.* The spleen is very much enlarged and extends from the sixth rib in the mid-axillary line to well down into the
pelvis in the vertical direction and somewhat to the right of the middle line in the horizontal, the notch being felt about the level of the umbilicus. There are various scars of the skin covering the area of enlarged spleen, some of them of keloid character, which patient says were produced by burning the skin in the hope of reducing the size of the spleen.

On initial examination there is no extra swelling at painful spot; but after a day or two, hot fomentations having in the meantime been applied, a fluctuating swelling of rounded shape about the size of half a large orange arose in the position where he complained of the pain. Maximum temperature, before operation, 102° F.

Operation. On the 29th, under chloroform, a vertical incision was made over the tumor and several ounces of foetid bloody pus were liberated. The peritoneum was fairly firmly adherent to spleen and the abscess cavity extended an inch into the substance of the spleen as measured by the finger.

The wound was left open, packed with zine cyanide gauze, and otherwise dressed antiseptically.

January 31st, wound dressed, looked well, not much discharge.

February 1st, again dressed, practically no pus. Introduce two silkworm gut sutures and draw cut edges of abdominal wall together, inserting small gauze drain at lower part. Gauze drain removed after a few days, wound healed rapidly and well.

Causation. At the operation a hard piece of material, looking like an attenuated bone about an inch long and about the thickness of a medium-sized needle, with central lumen, flowed out along with the pus. Neither patient or his relatives knew of any seton or anything of this nature having been introduced.

Remarks. Maxwell in 'Diseases of China' (Jefferys and Maxwell), speaking of tropical abscess of spleen, states:

(1). Disease is far more common than text-books would lead us to suppose [He mentions five cases seen by himself and others].

(2). Mortality not so high as is generally supposed.

Pathology. When we come to consider the pathology it seems necessary to distinguish between

(1). Cases occurring in temperate climates.

(2). Those occurring in the tropics.

Note.—My information regarding the pathology of cases occurring in temperate climates is taken mainly from an article in 'Practitioner' of April, 1911, by G. Newton Pitt, M.D. and C. H. Fagge, M.S., of Guy's Hospital.

(1). With regard to cases occurring in temperate climates. They are mentioned in connection with influenza, typhoid fever,
malignant endocarditis and perforating gastric ulcer. One case is mentioned in connection with dengue, and it would almost seem as if this ought to be included in the tropical section.

(2). As regards those occurring in the tropics, Maxwell boldly asserts, 'they always occur in a spleen already enlarged, usually greatly enlarged, by chronic malarial infection.' The five cases he mentions all occurred in this way. The case I have recorded would also correspond to this. I notice, too, in the article of Practitioner above referred to, Chowdhoory, an Indian surgeon, is reported as stating that in treating some 30,000 cases of malaria, he has met with only three splenic abscesses.

Main Features. Usually occur young subjects, seventeen to twenty-five; patients not acutely ill, yield readily to treatment.

Diagnosis. Distinguish from abscess of abdominal wall, which latter is more acutely painful and usually syphilitic.

Maxwell distinguishes amebic and bacillary cases, the former being more acute. What part the foreign body played in the causation of the case I have reported, it is hard to say.
The health of the community has been good for the period under consideration. It is to be regretted that the extreme heat of the latter half of July was responsible for two deaths. In all, five deaths occurred amongst the foreign community during the year, as follows:—

- Tuberculosis: 1
- Appendicitis: 1
- Heat-stroke: 2
- Liver abscess (at Shanghai): 1

Two births took place, one male and one female.

An outbreak of whooping-cough, introduced from the native city, resulted in about eight cases, all of a mild type, amongst the foreign children.

One case of typhoid occurred in a native constable, who contracted the disease at Lienhuatung.

There were two cases of dysentery in the Concession.

Of cholera, there were three cases: one case probably imported from the country, and two cases from river steamers; none in the Concession.

Malaria was prevalent, and the result of the importation of infected coolies for the construction of the railway, roads, buildings, etc. Anopheles mosquitoes are quite common in the Concession and also in the surrounding country. A severe epidemic of pernicious malaria occurred in the late summer and early autumn amongst coolies employed in the vicinity. Several foreigners were attacked, and cases were treated amongst the Chinese dwelling in the Concession. During next year, unless vigorous anti-mosquito measures are taken, a fresh epidemic, with more European sufferers, may be expected, as the parasite of malignant malaria exists for a long time in the blood of former sufferers, and only requires the intermediary anopheles to make it again infective to man.

No cases of plague have so far occurred. Residents have been warned to destroy all rats and keep their servants' quarters clean. Hankow reported officially one case in December. Watch is being kept in the streets for sick persons and in the hospitals for suspicious cases.
A severe outbreak of rinderpest destroyed many of the cattle in the surrounding country. The Health Department took pains to see that residents were not supplied with any of the meat from the diseased animals. A system of inspection of dairies will be introduced in the coming year.

REPORT ON THE HEALTH OF CHINKIANG FOR THE HALF-YEAR ENDED 31ST MARCH, 1911.

Dr. M. Urbanek's.

The health in Chinkiang during the above period has not been at all satisfactory: in the comparatively short period from December till the present, no less than six cases of typhoid have occurred among foreigners alone. Taking into consideration the fact that nearly thirty per cent. of the foreigners under my care have had typhoid fever before, and are more or less immune from a second infection, I hardly dare to draw a conclusion. There has been an epidemic of enteric among Chinese (which is still raging); it undoubtedly originated among the thousands of famine refugees. Real famine typhus has also been prevalent. It has not been possible to trace the source in all cases among the foreigners. There is no protection for the residents: the water supply is very primitive, food and milk are under no supervision, and it is therefore only natural that a slight remissness in individual precaution may lead to the above results. In the past, sanitation and hygiene have been neglected in Chinkiang, and, as often happens, those guilty of the neglect escape the consequences and the innocent suffer, especially children.

It is interesting to note that in the autumn, just before the outbreak among human beings, there was a real epidemic of enteric among dogs, first among Chinese wonks and then in dogs kept by foreigners. I had opportunities of making seven llistrations on dogs, and have been quite astonished to find typical ulcerations in the bowels (ileum), infiltrated glands in the peritonaeum, big tumor of the spleen, and excessive parenchymatous degeneration of organs—heart, liver, and kidneys; ulcerations and infiltrations were in the ileum, solitary folliculi, and the Peyer's patches,—in a word, the typical pathological picture of typhus abdominalis. Death in most cases was due to septicæmia, as all but one had perforation and peritonitis. Clinical symptoms, as far as I can find out, kept on for fourteen to twenty-one days. The dog refused to eat, got very weak, and seemed to suffer.
from great thirst. The weakness so increased in three days that sometimes the animal was hardly able to get up or move. Death usually resulted under symptoms of complete exhaustion and heart failure. I am sorry that I neglected to obtain a culture from the spleen; it would have been of great importance to ascertain whether the bacilli were identical with the enteric bacilli (Eberth, Gaffky, Loeffler).

**ANTHRAX.**

Two cases of anthrax came under my observation, one from Chinkiang, with a pustula maligna on the under lip. Patient was a boy in a house where there were several children. Though efforts were made to trace the origin (with the help of his employer, who is a good Chinese scholar, and thus able to make personal inquiries), they were unsuccessful. The pustula was taken out with thermocauter and hot alcohol compresses ordered. The infection did not localise itself, and a real anthracocythæmia developed, with fever. Exitus on the third day. I procured slides from perepheric blood and anthrax bacilli, and spores were found.

The second case, from Nanking, recovered; but it was impossible to trace the origin of the infection. Pustula maligna between the scapulæ, nearer to the right, which, patient said, he felt for only two days. The pustula, about 1 cm. in diameter, was very hard, red infiltration round, and a few small yellowish blisters. I did not believe in the anamnesis. Fever, 103° F.; pulse, 120. Pustula was removed with thermocauter. The hole was nearly 7 cm. in diameter and 4 cm. deep. On the next day there was no fever. After four days the bandages were changed. Sound granulations. Complete recovery in three weeks.

**ŒDEMA MALIGNUM.**

One case came under observation. The infection originated in the right gingiva, over the second and third molar. Patient, a servant employed at Chinkiang, was a strong man, about forty years of age.

1st Day.—High temperature, 103.4° F. Enormous swelling of the right cheek. Patient could hardly swallow liquid food. On examination, external hard swelling of the right part of the face; glands infiltrated on the neck. Peros-pseudo fluctation in the swollen palatal arcus and tumor of the tonsil, also of gingiva and round two rotten upper molars. Incision and extraction of both molars; very little pus; gangrene in the opened tissue.
2nd Day.—On the neck down to the shoulder emphysema subcutaneum; brownish colour of the affected part.

3rd Day.—Exitus. Origin could not be ascertained.

All other diseases—eye, typhoid, malaria, scarlet fever, small-pox, diphtheria, typhus, etc.—did not present anything worth mentioning, with the exception of one case of pneumonia, a chart of which is given below. The case came under my observation on the 7th day of illness, when the temperature was 102° F.; pulse, 140; breathing, quick, superficial (38); delirium. Both right and left labi affected; loud tubar breathing on both sides up to the middle of both scapulas. Very troublesome cough; sputum reddish, in small quantities. The man has been potator strenuus. What I wish to point out is the splendid effect which I have observed after two intravenous injections of fibrolysin, 2 ccm. at a time, as on the chart. The solution of the exudat started about two hours after injection, resulting in enormous fairly easy expectoration and reducing the quick superficial breathing very considerably. The second injection was made on account of a
new (probably) infiltration which appeared on the next day in the right lung, with rigor, sanguinulant sputum, and rise of temperature. The first injection was made after a venesection. I let out six ounces of blood from the median a and injected in the same vein. There was no marked perspiration with the remarkable drop of temperature—four degrees in only four hours. The patient recovered completely.

In February very alarming news was received at the head office of the southern section of the Tientsin-Pukow Railway, and on 1st March I went with the Engineer-in-chief, Mr. T. W. T. TUCKEY, to Hsuchaofu, to verify the rumours that plague had broken out. The railway leads partly through the famine-stricken district. It is hardly possible to describe the lamentable condition of the unfortunate people. The death-rate there is enormous, due to famine typhus and starvation. The rumour started on account of the fact that the starved, having no resistance, when infected with typhus, died in one or two days, before it was possible to make any diagnosis.

There was no plague in the vicinity, and its absence can certainly be considered as most fortunate, because if the district had happened to become infected with the pest, I don't think that the liveliest imagination could portray the scene of destruction which would have been unavoidable. In many places the starving population stripped the bark from trees, and hundreds of people have been seen digging out of the earth rotting roots, to satisfy their craving hunger.
The China Medical Journal.

Vol. XXV. NOVEMBER, 1911. No. 6.

The yearly subscription to the China Medical Missionary Association is $4 Mex., payable in January of each year. This includes the Journal and postage on the same, whether local or foreign.

All changes of address, departures on and arrivals from furlough should be notified to the Secretary and to the Presbyterian Press. Members are requested to invite new comers to join the Association.

The Editors will be obliged if all those who are building hospitals will send copy of plans and detailed description (in duplicate if possible). These will be loaned, on application, to members who are proposing to build.

Editorial.

WHAT NEXT?

That China is a country subject to rapid alternating vicissitudes of life, liberty and the pursuit of happiness, not to mention the regular conduct of one's business, is a fact which few who have lived here will dispute. Periodicity of misfortunes is also a well-marked symptom, as a glance at its revolution chart, or flood and famine bedside record, will corroborate.

In China it is the unexpected that happens: in the midst of the quiet routine of life one suddenly finds himself in a flood, fire, riot, typhoon, famine, or revolution. Some years ago it was South China or Kansuh, again North China, as in 1900, and now Mid-China.

As the Boxer uprising caught people unprepared, so now the present revolutionary movement has culminated in an outbreak so sudden, involving such extensive territory and interests in its upheaval, that the mind is staggered by the prospect.

That such a state of affairs could or should arise is surprising to no one who is familiar with the history of the present dynasty or the trend of thought in Young China; the only question has been, how long could it be averted.

The Chinese people throughout Southern and Central China are profoundly moved; the deep undercurrent of feeling in favor of the present revolutionary movement and against the dynasty is unmistakable.

Can the change be made, and have the reform party the strength, the resources and the cohesion at this time to carry a
revolution to a successful conclusion? At the present writing it is impossible to predict; only the Lord of Hosts who rules over the destinies of peoples and nations knows what the outcome will be. Will it be the ascendancy of another Chinese Dynasty over the northern conquerors, under which truth and justice may be established for all generations, or will it be a sad repetition of the Taiping Government of fifty years ago?

Shall all that has been accomplished by God's people for this people be wiped out in the flames of anarchy and riot, as it was in 1900? Come what may, let us rest secure in the fact God is all powerful, and in His own time His plans and purposes for this nation will surely come to pass.

GRATIAS AGO.

After an interval, which to many readers of the Journal may have seemed inexplicable, we are able to print two very interesting and instructive sketches of the epidemic of pneumonic plague, which is still fresh in our memories. Dr. Hill's article on quarantine measures is exactly the sort of thing most of the readers have been hoping for, and Dr. Aspland gives us the reason for his long silence, which is accepted with apologies for the hard thoughts that have been entertained for him through the past six months.

The kindness of Dr. Hill and Dr. Aspland in giving us these notes of their own experiences in those trying times will be appreciated most gratefully by the whole body of the Association.

THE NEXT CONFERENCE.

The Executive Committee met on the 3rd of October and voted to accept the invitation of the North China Branch and hold the next Conference in Peking sometime during the Chinese New Year, A.D. 1913. The arrangement of the program was left in the hands of the local committee. Dr. Judd of Jaochow, Kiangsi, whose letter will be found under correspondence, makes several suggestions for the success of the conference which the local committee, as well as all those who hope to attend and participate
therein, would do well to consider, though the actual accomplishment of his suggestion may not be possible. The carrying out of such a plan would rest with the local committee.

THE FAMINE COMMITTEE.

It is pleasant to notice that in the organization of the Central China Famine Relief Committee of 1911-12 a medical sub-committee has been appointed, consisting of Dr. Wang of the Shanghai Red Cross Society, Mr. Chang Chih-chien of the Shanghai Dispensary, Drs. Kie and Patrick, and Dr. W. H. Jeffreys late editor of the JOURNAL.

The definite idea in mind, as we understand it, in forming this medical committee, is that medical work in connection with famine refugees might be organized on a more business-like basis; to avoid interference in local hospital work by discriminate distribution of drugs and medical relief; and most important of all, to take steps for the thorough study and investigation, and if possible, to reduce the frightful spread and mortality of, typhus and famine fever among those concentrated in famine camps at large centers.

THE FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE.

We take pleasure in again calling the attention of the readers of the JOURNAL to this meeting, and in reprinting the revised program just received from the Secretary, Dr. Francis Clark, Hongkong.

The program is most attractive; and as there is nothing of the sort due in China for another year and a half, outside our local summer meetings, and the present upheaval having turned many of the doctors from the interior out of their work for a time, it ought to prove a valuable means of recreation and professional help to all who are fortunate enough to attend.

SECOND BIENNIAL CONGRESS.

DEAR SIR:—The Second Biennial Congress of this Association will be held in Hongkong from Saturday, January 20th, to Saturday, January 27th, 1912, and you are cordially invited to attend and to take part in the work of the Congress. The Association is an international
one formed to promote the science and art of Tropical Medicine in the Far East.

Saturday, January 20th, will be devoted to the reception of official delegates and visitors, leaving the whole of the following week for the scientific work of the Congress.

The papers offered will be classified, so as to give, as far as possible, a day to each of the following groups of subjects:—

Protozoology—Helminthology.
Cholera—Plague—Leprosy—Tuberculosis.
Tropical Fevers, including Malaria—Beri-Beri—Dysentery.
Surgery—Obstetrics—Infantile Diseases.
Climate—Hygiene—Sanitation.

The following practitioners have already expressed their intention to submit papers, and other members of the medical profession in the Far East who are willing to introduce subjects for discussion are requested to communicate at once with the Secretary. Papers may be read in either English, French or German, but authors are asked to send a brief abstract in English in all cases.

J. Mitford Atkinson, M.B., D.P.H., Hongkong:—Presidential Address:—
The progress of tropical medicine during the past twenty-five years.

J. C. Dalmahoy Allen, M.D., Hongkong:—Blood pressure.

Professor Cheng Hao, Canton Army Medical School, Official Delegate from the Government of China:—Subject not yet announced.

Major Weston P. Chamberlain, M.D., Chairman of the United States Army Board for the Study of Tropical Diseases as they exist in the Philippine Islands:—
(1.) Prevention of Beri-Beri among the Philippine (Native) Scouts by the use of undermilled rice;

and in conjunction with Captain Edward B. Vedder, M.D.:—
(2.) The substance in rice polishings which prevents Polynervitis gallinarum and Beri-Beri.

C. Noel Davis, M.B., D.P.H., Shanghai:—Beri-Beri.

Lawrence G. Fink, M.B., Burma:—Blackwater Fever in Burma.


H. Fraser, M.D., D.P.H., Official Delegate from the Government of the Federated Malay States, Director of the Institute for Medical Research, Kuala Lumpur:—Beri-Beri.

Paul C. Freer, M.D., Ph.D., Official Delegate from the Government of the Philippine Islands:—Results of the past two years' work in the study of tropical sunlight.

Dr. Fürth, Staff Surgeon, Official Delegate from the Government of Kiautschou:—Neuere Untersuchungen über Flecklyphus (Latest researches into spotted Fever).

G. Montagu Harston, M.D., Hongkong:—
(1.) The care of children in the tropics.
(2.) The care of the eyesight in the tropics.

Victor G. Heiser, M.D., Official Delegate from the Government of the Philippine Islands:—Beri-Beri.
C. Montague Heanley, M.B., D.P.H., Hongkong — *The laboratory diagnosis of Syphilis*.

Major S. P. James, M.B., D.P.H., I.M.S., Official Delegate from the Government of India — *Subject not yet announced*.

Gregory P. Jordan, M.B., Hongkong — *Carbon dioxide snow — its use in private practice in the tropics*.

K. Justi, M.D., Hongkong — *The Diagnosis of Malarial Fever in the absence of the parasites from the peripheral blood*.

O. Müller, M.D., Hongkong — *The Surgical Treatment of Dysentery*.

J. A. F. de Moraes Palha, M.D., Official Delegate from the Government of Macao — *Subject not yet announced*.

Sir Allan Perry, M.D., Ceylon — *Indian native coolie immigration*.

J. M. Swan, M.D., Canton — *Some rare conditions which have been met with in the treatment of vesical calculi in South China*.

Richard P. Strong, M.D., Ph.D., Official Delegate from the Government of the Philippine Islands:—

(1.) *Immunization against Pneumonic Plague*.

(2.) *The Aetiology of Beri-Beri*.

H. Gordon Thompson, M.D., F.R.C.S., Pakhoi — *Surgical Work in South China*.

Dr. Uthemann, Fleet Surgeon, Official Delegate from the Government of Kiautschou: —

(1.) *Stadtanlage und sanitäre Einrichtungen in Tsingtau* (Town planning and sanitary conveniences at Tsingtau).

and will introduce a discussion on:—

(2.) *Die Notwendigkeit der Quarantänebestimmungen an den Küstenplätzen Ostasiens nach Möglichkeit in Übereinstimmung zu bringen* (The necessity for uniform Quarantine Regulations for all the coast ports of China).

Captain Edward B. Vedder, M.D., United States Army Medical Corps, Manila — *An experimental study of the action of Ipecacuanha on Amoebae*.

G. Duncan Whyte, M.B., Swatow — *Tuberculosis in South China*.

J. P. A. Wilson, F.R.C.S., Ed., D.P.H., Official Delegate from the Government of Johore — *Subject not yet announced*.

In the event of any member of the Association being unavoidably prevented from attending the Congress his paper will be read by the Secretary, if duly forwarded for that purpose.

The Meetings of the Congress will be held in the City Hall, commencing on Saturday, January 20th, at 11 a.m., with an Address of Welcome by His Excellency Sir Frederick J. D. Lugard, G.C.M.G., C.B., D.S.O., Governor of the Colony.

An office will be opened at the City Hall on Friday, January 19th, for the registration of the names of members of the medical profession who propose to attend the meetings, and for the issue of cards of membership, invitations, etc., and will remain open until the last day of the Congress; members may arrange for letters, telegrams, etc., to be addressed to them “care of Medical Congress, City Hall, Hongkong”.

The subscription to the Association is 10/6 ($6 Hongkong currency) and is due now (1911), but no further subscription will be required until 1913.
A suitable social programme is being arranged for the entertain­ment of visitors during the Congress.

You are requested to forward the accompanying slip to me, duly filled up, at your earliest convenience, for the information of the local Committee, unless you have already notified your intention to be present.

I am, Sir, Yours very faithfully,

Francis Clark, Secretary.

Hongkong, September 25th, 1911.

**PUBLICATION COMMITTEE.**

An Atlas of Anatomy, being 432 wood-engravings, 240 of which are printed in colours, selected from the late Prof. Cunningham's Text-book of Anatomy, with explanatory text in English and Chinese.

The illustrations in this atlas were printed in Edinburgh and the letter press in Japan. To quote from the preface:—"As diagrams and models are still the principal aids to the study of human anatomy in China, and as our systematic treatises are indifferently illustrated, it has been thought well to issue an anatomical atlas which can be used in conjunction with any of our text-books. The illustrations in Cunningham's Anatomy seemed specially suitable from their diagrammatic clearness and fineness of execution, and accordingly 432 of them were selected from that work, the largest number that could be included without unduly raising the cost of the atlas."

The book will be of great assistance to students in the study of anatomy, and it is quite essential that every one should possess a copy.

Practical Anatomy, Heath, a Manual of Dissections, translated by Dr. T. Cochrane and Dr. F. T. Hsieh. This is a complete and almost too literal translation of the ninth edition of a well-known practical anatomy. All the original diagrams, 321 in number, are inserted, 320 being coloured plates. This book has been issued in response to a demand for a treatise on anatomy dealing with the subject from the regional standpoint. It contains no osteology, which can be studied in Essentials of Anatomy. This smaller book, indeed, should form an excellent introduction to Heath.

Ophthalmology, Fuchs, translated from the Third American Edition by Dr. J. B. Neal. The translation includes the principal parts of the large type in that edition, that is to say all really important matter in Fuchs' well-known text-book. There are 63 illustrations and 3 coloured plates of the founders.
Therapeutics, Hare, translated by Dr. J. H. Ingram, second edition, from the thirteenth American edition, 109 illustrations. Dr. Ingram has entirely rewritten this work, and over 100 new drugs have been added. It will be warmly welcomed.

Physiology, Halliburton, Fifth Chinese Edition. This has been to a considerable extent revised from the ninth English edition.

Surgery, Rose and Carless. Vol. III may be issued in November and it is hoped the much overdue Caird and Cathcart's Surgery may be published before these notes are in print. It is a useful little practical book.

This winter's printing programme includes a second edition of Evan's Obstetrics, Surgery Vol. IV, Dr. McAll's translation of Stetigel's Pathology, a third edition of the Manual of Nursing, and the final chapters of Roy's Pharmacy.

The Editorial-Secretary has been forbidden to return to the Far East this winter for medical reasons. His address will be to Hermitage Gardens, Edinburgh, Scotland, via Siberia.

P. B. C.

Book Reviews.


The physician who has solved the problem of constructing in China a 茅厕 which will be permanently unobjectionable from the sanitary point of view, is a very fortunate and ingenious individual, especially if he has charge of educational institutions in addition to his hospital. Usually a good beginning is made, but alas! before long we recognise the force of the Chinese proverb 新聞的茅廁三天香, which is the equivalent of the Western proverbial saying that a new broom sweeps clean. Moreover, the sanitary requirements are increasing in number. According to one of the pamphlets under review, a privy is not primarily, as its name appears to indicate, a structure which secures privacy. This is said to be quite a minor consideration,
an observation which few of the Chinese men of the lower classes will
care to dispute. Its chief purpose is or should be to prevent the
pollution of the soil with the organisms of disease, the most important
single measure which the sanitarian is able to accomplish. Hence it is
no longer sufficient to construct a well-ventilated building with cement
floors, containing receptacles that can be easily changed and cleaned.
The whole building must be thoroughly screened from flies and other
insects, and the excreta must be rendered innocuous. How all this is
to be accomplished at a moderate expense is not an easy problem, and
it is made all the harder in this country by the habits of the Chinese.

In the first pamphlet, the experimenters, starting out on the
principle that the forces of nature in fermentation should be utilised as
far as possible, describe an apparatus which it is claimed will meet the
objections to the wet system. The accompanying illustration is sufficiently clear to
make a verbal description unnecessary. When ready
for use, the liquefying tank
is filled with water up to
the point where it begins to
trickle into the effluent tank,
and as an insect repellant, a
thin film of some form of
petroleum is poured on the
surface. In actual use, the
rod is pulled up so that the
anti-splashing board rises to
within one inch of the sur-
face of the water. This
prevents the splashing which
is one of the greatest objections to the wet system. On leaving, the
rod is lowered. The faecal matter then floats, but it is protected from
insects by the automatically closing lid, by the water, and by the film
of oil. The fermentation which takes place causes it to gradually
liquefy. As the level of the liquid is raised, the excess flows into the
effluent tank, where it is also protected from insects by the cover and
by the film of oil. The effluent may be allowed to collect until it
reaches the level of the connecting pipe. It is rarely necessary to add
water to the liquefying tank, and it only requires cleaning once or
twice a year.
SIX-SHEATED SANITARY PRIVY FOR SCHOOLS. Rear View.
The effect of the fermentative changes upon the viability of typhoid bacilli, hook-worm eggs, and other organisms of disease, has not been accurately determined, but experiments tend to show that in the condition described, the vast majority die within six or eight weeks. Anyway, the effluent may be boiled just as it is in the tank, and can then be used for fertilising purposes with perfect safety. Other methods of disposal and disinfection are burial, chemical disinfection, chemical disinfection with subsequent burial, sewers. The use of fresh night soil as a fertiliser is strongly condemned. Disinfection by heat is the only measure which is recommended unreservedly.

The experimenters claim for their apparatus that it meets the following requirements: (1). It solves the fly and the mosquito problem as far as the privy is concerned; (2). It liquefies faecal matter and reduces its volume, so that it may be safely disposed of more easily and cheaply than night-soil. (3). It reduces odor. Although the period of experimentation covered the hottest part of summer, the odor was negligible when compared with that of the average outhouse. (4). It reduces the labor of cleaning, and makes the work less disagreeable. (5). It is of simple and inexpensive construction.

In the second pamphlet a more familiar arrangement is described, as is evident by the illustration. [Page 409.] Stress is laid on the necessity of providing the outhouse with copper wire-screened ventilators, and careful estimates are given of all the materials required. The different methods of disinfection are examined, and again burning or boiling is said to be the best. It is recommended that the receptacles be cleaned once a week in winter, and twice a week in summer, and there should be a double set of pails or tubs. The writer closes with the remark, very applicable to the state of affairs here, that undoubtedly the problem is a very difficult one, and in the last instance involves a general education of the rising generation of school children in respect to the dangers of soil pollution. The pamphlets may be obtained without cost.

E. M. M.
Branch Reports.

KOREAN BRANCH.

Annual Meeting.

The Korean Branch seems to be more marked off from the parent association than most of the others, not only geographically and politically, but also, and particularly, by the fact of the great difference in language, which makes the use of the publications of the association of no use, unless they be retranslated. It has therefore to take up for itself many of the problems which are solved for other branches as a whole, and has to appoint a number of committees of its own for the various parts of its work which have to carry out their duties independently.

The annual meeting this year was held in Seoul from September 30th to October 3rd and was attended by twenty-three members and six visitors. The time was about equally divided between science and business. The officers for the year elected were:—President, Dr. W. T. Reid; Vice-President, Dr. J. D. Van Buskirk; Secretary and Treasurer, Dr. H. H. Weir; Editor, Dr. R. G. Mills. Committees were appointed for research; publication of tracts (including the drawing up of a course on hygiene for use in Bible classes); education, to act with the officers of the Severance Hospital Medical School and oversee examinations on behalf of the association with a view to the countersigning of diplomas; nurses' education, to act with a committee of the nurses' association to draw up regulations, etc.; medical terms, to compile a book of terms in use among the Koreans with the nearest possible scientific rendering; and representative, consisting of senior men drawn from the various missions to act for the association as occasion may arise.

The members elected since the last annual meeting are:

- Dr. Mary S. Stewart, M.E.M., Seoul.
- Dr. Ira D. Miller, M.E.M., Yenghen.
- Dr. Newton H. Bowman, M.E.M. (South).
- Dr. R. K. Smith, A.P.M., Seoul.
- Dr. J. D. Bigger, A.P.M., Kangkai (problem).

A paper was read by Dr. Norton on infantile paralysis, which was followed by a good discussion. There seems to be reason to think that the acute cases with very few cerebral symptoms which he described may be common, though hitherto not often recognised.

A paper by Dr. Mills on infant mortality led to a statistical discussion and revealed a good deal of the commoner causes of death.

A discussion on the use of bismuth injections was opened by Dr. Miller, who had seen something of Beck's work. Many members had been using the treatment during the past year, but with very variable results. Further work will be undertaken and the research committee will endeavour to unify methods and collect results.

A paper on early tubal pregnancy was read by Dr. Borrow reporting a case. Other cases were reported by other members, and it seems likely that with a fresh knowledge of the symptoms in mind others will be met with not infrequently.

The last meeting was devoted to the comparing of reports, filled in by the members present at the
conference, of the diseases of Korea as noted by each one. A number of short but very interesting discussions resulted.

FUHKIEN BRANCH.

The Fuhkien Branch of the C. M. M. A. held its usual two meetings at Kuliang. The matter of a Union Medical School in Foochow caused a great deal of discussion. As it was found impossible for the various Missions to unite at present, owing to a lack of men and funds, the following resolutions were adopted:

Resolutions Passed by the Kuliang Branch of the China Medical Association on August 24th, 1911.

1. That the six Missions represented in the Kuliang Branch of the C. M. M. A. be invited to appoint a man or men to give annual courses of fifty lectures. These lecturers shall be members of the Faculty with full faculty powers during the period of their lectureship.

2. That for each lecturer appointed by a Mission it shall be entitled to a representative on the Board of Trustees; provided that no more than three trustees be appointed from any Mission.

3. Each Mission represented by a lecturer will be requested to make an annual subscription to the running expenses of the school of two hundred dollars (Mexican). All expenses incurred by the lecturer in the service of the school shall be met by the school, subject to the approval of the Board of Trustees.

4. Any special gifts from friends given to any member of the staff for the use of the school shall be handed to the treasurer of the trustees, but be at the disposal of the person to whom they are given.

5. The above scheme is recommended as a "modus vivendi," but does not exclude further development on the basis drawn up by the Committee of 1910.

6. That a copy of these resolutions be sent by the secretary to the secretaries of the six Missions to be forwarded to their Parent Committees.

Dr. Wilkinson presented two papers on "Abscess of the Spleen" and "Tumor of the Mesentery".

Dr. Coole read a paper on some new remedies: 1. The use of quinine and urea hydrochloride as a local anesthetic; 2. The combined use of sodium bicarbonate and sodium salicylate.

Dr. Woodhull read a paper on cholera. Dr. Beton reported two cases of ovariotomy. Dr. Lyon reported two cases of submucous fibroid of the uterus.

Dr. Wilkinson reported several cases of ovarian cysts.

A discussion of the best method of operation for hemorrhoids. Different members advocated clamp and cautery and dissection and ligation.

Dr. Gossard recommends removing only the part which is thrombosed.

We welcomed one new member this year, Dr. Francis B. Sheldon, and with great regret parted with one of our oldest members. The following resolutions were offered:

Resolved: That we are grateful to the Almighty Father that Dr. Woodhull has been able to work for so long a period alleviating human suffering and building up the Christian Church in China. Having heard of her intended departure for home, we tender her our sincere well wishes and pray that the blessing of our Heavenly Father may abide with her wherever her new home may be.

LENA HATFIELD, Sec'y.
ALOPECIA AND SEBORRHEA.

By Dr. Ch. J. White, Professor of Dermatology at Harvard University, Boston. Journal of the American Med. Assoc., 1910, Nov. 13.

Out of 794 cases of alopecia and seborrhea the author shows that more women than men suffer from these diseases. He discussed the possible etiological factors in alopecia simplex and seborrheica, mentions the age of the patients who suffer for the first time from these complaints, and finally speaks of the treatment of alopecia seborrhoeica. He uses soaps and internal medicaments and massage, besides hair washes and pomades.

The best results he obtained were from the following prescription:

- Hydrarg. chlorid corrosiv. ... gr. IV.
- Euresol ... ... ... oz. II.
- Spir. formicarum ... ... oz. I.
- Oleum ricini ... ... ... oz. I-III.
- Spir. 70 per cent, ad ... ... oz. VIII.

M. S. Hair lotion (Poison) to be rubbed in every morning.

The effective ingredient of this prescription is euresol, the subacetate of resorcin. Even in hopeless cases the lecturer was able to get good results from it. In addition he gives statistics on the results of his treatment arranged according to age. Finally he gives some particulars dealing with seborrhea and the parts of the head which are specially liable to alopecia areata and herpes tonsurans vesiculosus.

In the subsequent discussion Dr. W. O. Roop, Dayton, refers to his entirely satisfactory results in the use of euresol in cases of seborrhea.

Dr. J. B. Kessler, Iowa City, also obtained very good results while, for example, Dr. I. Dyer, New Orleans, could not establish the superiority of this preparation over resorcin.

Hospital Report.

TISDALE HOSPITAL, CHUCHOW:

This is the tale of the growth of a medical missionary work and the resulting hospital. A medical work is a matter of growth. A hospital should not necessarily be at the end of the growth. Neither should it be at the beginning,—especially when the work undertaken is not in a large and influential centre.

Chuchow has perhaps 20,000 people, with a rather scant rural population for China. As a centre for mission work, there are no other missionaries within an area covered by a population of a couple of million of people. It is thirty-five miles from Nanking. The new Tientsin-Pukow railroad gives direct communication with that large centre.

Medical work began here in 1899, when we were appointed to mission work here. For some years before that other missionaries had given out simple remedies and established a sort of a dispensary. Our first work was done in the little thatched-roofed chapel, where we went so far as to amputate the lower arm of a boy. An immense sarcoma was the direct cause for the operation. We were glad to report that first operation remarkably
successful, as the wound healed by first intention, and the boy is still alive.

The Boxer year drove us out and gave us time to meditate upon the best way to put $300 gold, which had been given by Christian Endeavorers in Ontario, Canada, into a workable dispensary building. This we put up in 1901. It was a building $35 \times 22'$ with an additional veranda running the entire length. It contained a chapel, dispensing and dressing room, an operation and drug room.

Patients began to apply for place to stay, and about $300 gold more was scraped up from different places, which was used to give rooms for perhaps sixteen in-patients. This did very well up to 1906, when we went on furlough. Up to that date we did not have more than 125 in-patients and 3,000 out cases during the period of any year.

When we returned to the field, the first thing noticeable was the immense increase in number of patients. In a year and a half it had trebled the previous records. We hunted around and temporarily mortgaged the buildings of a grain hang. It contained perhaps sixteen rooms of various sizes. Four rooms were floored and had bricked walls. There were thatched and tiled roofs, dirt and brick floors, and even open sheds, among the buildings. A brick-paved court added to the value of the place. It was a very poor place to do operations, but very fair for housing in-patients. There would be forty at a time of the latter.

Then the missionary society stirred up the Christian Endeavorers of America and sought to raise perhaps $3,000 or more to build a hospital. Upon the strength of this $2,700 Mexican was obtained and a two-story building, with roomy attic and veranda the entire length, was erected. This building was $25 \times 63'$, exclusive of the veranda. All the wood work was practically of Chinese pine, and consequently not very lasting. The railroad came along and put up emergency wards with cement floor but thatched roof for their patients, and we added similar buildings for chapel and clinical work. Here we had the maximum we care to handle, namely fifty in-patients at one time.

The mission society had enlisted O. G. Hertzog, of Hiram, Ohio, in the Chuchow medical work. That was perhaps not very hard, as he was closely related to the workers already. Mr. Hertzog has had long experience with men of money who desire to use it for philanthropic and religious work. He enlisted the interest of Mr. and Mrs. James M. Tisdale, of Covington, Kentucky, in the hospital project, and they decided to take over the whole responsibility. They gave $5,000 gold and asked to have the hospital erected as a memorial to Mr. Tisdale's sisters.

Mr. and Mrs. Hertzog decided on a visit to China, and undertook the oversight of the building while they were here. With their aid the building already completed has been made to fit most admirably into a complete hospital building. The original building is 63' long, divided into three equal sections. To the south side of this on either end was added a wing, each wing being 21' in width, or equal to a third of the length of the original building. This leaves a court of the same width between the two wings. This court is cemented and makes a valuable addition to the plant.

The original veranda was retained in nearly its entire length for passage way, that is, part hall and part veranda. To the middle on the north side of the original build-
ing has been added an 8' x 16' two-story veranda, making a fine front appearance for the building. In this original building foreign flooring has been laid directly on the Chinese flooring, strengthening it. The lower floor is entirely of cement. Windows have been replaced, likewise, with better material, and the former ones used in side buildings. The masons have done their work well, making almost perfect joining of the work. The building has over 5,000 square feet of floor space, besides veranda.

Kitchens, wash house, dining room, servants' quarters, store room, refugee patients' ward, isolation ward and morgue are in separate buildings. All give ample accommodation for 50 in-patients, including rooms for private patients, women's wards, and assistants' quarters. The outbuildings all have cement floors and tile roofs. Open cement drains carry off surface water. The river flows directly in front of the hospital. At flood time the water in this is ten feet below the hospital ground. During other times it is much lower. So excellent drainage is affected.

To the south of the grounds are open fields of market gardeners. The nearby mountains give both fresh air and fresh water. Our wells are remarkably pure.

It has been twelve years since the work was begun. The large growth in number of patients show that the medical work has been appreciated by the Chinese. On the day of the opening of the complete building the leading men of the city attended in a body and publicly expressed their appreciation of the medical work done.

During these years we have had to face the same problem alike with other mission hospitals, that of raising up and training assistants. Eight have spent more or less time in the hospital. One who had spent five years in another hospital, after being two years with us, went out to a profitable private practice. He has maintained a good character, aiding in the work of the church. A second and third are now in medical schools. One proved to be out of his sphere and has gone into other work. Two more are still students.

The remaining one has been in connection with the medical work here for eight years. He has borne a Christian character and been most active in the evangelistic work in the hospital. We have been unable to lead him through a thorough medical course. Medical missionaries working alone know the reason why. Some day medical schools will be able to solve the problem for us. Nevertheless this man has steadily grown in medical knowledge and skill. We therefore upon the day of opening the hospital presented him with a certificate of service.

Three points were outlined to him and the audience as to the field of the physician: 1, to alleviate suffering; 2, to fight disease; and 3, to improve health conditions. The first requires sympathy and maintenance of high character. The second requires great courage. The third must often be done without expectation of recompense. This student remains with the hospital for aiding now in the perfection of the completed plant.

We said at the beginning that it is wise not to have the hospital building at the beginning of the work in the smaller centres. The doctor needs to learn the size of the demands of the place and how much he is capable of doing well. Had we built at the beginning we would have built too small. Had we built later we might have built much too large. It is better to do little well than to do much poorly.
We have tried to emphasize two things in this medical mission work. We have tried to use care in the administration of drugs and not fall into routine. This is a very careless tendency where we are obliged to see a large number of patients in a limited space of time. We have kept the evangelistic side of the work prominent. It was to save the Chinese from their sins for which we came to China. We trust in the new plant to much more satisfactorily carry out these matters.

Elliott I. Osgood, M.D.

Correspondence.

Union Medical College, Peking, Sept. 26th, 1911.

To the Editors of "The China Medical Journal."

Dear Mr. Editor: I apologise for not responding to your broad hint in the last Journal, sooner, and sending you some slight report of the International Plague Conference. The fact is you would have had it months ago, but that the Chinese government did not wish the findings and resolutions of the committees made public until the report was published. As that report will be out very shortly, I don't feel 'tis committing a very great crime in writing this late date a few facts, as I remember them.

If I may interject a personal impression or two, received as medical secretary of the Conference, I don't think we got out of it quite what we expected, and the Chinese government was not overburdened with information and instructions in return for their lavish expenditure and unbounded generosity. This may be accounted for by the fact that with the exception of men who had been working in the epidemic, the other delegates, though exceedingly well up in bubonic plague, knew very little about pneumonic plague in its epidemic form. We were told almost all we knew, or didn't know, about bubonic plague from the Eastern Counties of England to Japan, and every country in between, and we often almost felt inclined to call out "ratts," as we listened to irrelevant discussions and papers, on some side issue, about bubonic infection, when all the time we were dealing with an epidemic as different from bubonic plague in every particular as diphtheria is from anthrax. On the other hand, the greatest credit is due to the American, Chinese, Russian and Japanese delegates, all of whom had worked in the epidemic.

For the history of the presumed origin, spread, and decline of the epidemic, your readers must wait until the full report is published, and for this article I will simply mention some of the general deductions.

1. The disease was spread by direct infection from man to man, and whatever may have been its primary origin, there is no evidence that a concurrent epizootic in rodents played any part in its general dissemination.

2. The decline of the epidemic was not due to any loss of virulence of the bacillus, but due to the preventive measures taken. Climatic influences may have contributed indirectly or even directly towards bringing the epidemic to an end, but the evidence presented was inconclusive.

3. There was no positive evidence to show that infection was spread by cloth-
Correspondence.

ing, merchandise, or other inanimate objects.

4. The incubation period varied as a rule from two to five days. A rise of temperature and increased pulse rate were the earliest symptoms observed, but a positive diagnosis could not be made until the bacillus was found in the typical blood-stained sputum.

The physical signs of lung involvement are too indefinite and appear too late in the disease to be of diagnostic value.

5. No method of treatment has been of any avail in saving life, but the serum treatment has in several instances prolonged the course of the disease. As much as 400, 800, and 1,800 c.c. of serum has been used on individual cases.

6. The bacillus isolated during the epidemic differed in no essential respect from the strains of bacillus pestis previously isolated from epidemic of bubonic plague.

7. The source of infection is not so much in the breath of the infected during quiet respiration, as in the droplets of sputum discharged from the mouth whilst coughing.

8. Statistical evidence shows that inoculation with vaccines gives a certain amount of protection in bubonic plague, and as the bacillus is the same, therefore, a priori, it will do the same in pneumonic plague. Experience did not bear out this syllogism. As far as our experience who were fighting the epidemic goes, the question stands thus: Given efficient masks, and there was no fear; without them repeated inoculations of vaccine did not protect. Some workers have died after four, five and six inoculations stretching over a month or six weeks; but in nearly all cases there had been some want of care, or contact with an unknown case when no mask was worn.

9. No particular vaccine was shown to be better than others, but the two or three day Agar cultures were recommended when a large quantity is wanted in a hurry. Throughout the last epidemic Bouillon cultures (i.e. dead bacillary vaccine) were mostly used, though the Japanese used the three day Agar cultures.

10. The pathology of the pneumonic plague, as shown by 28 post-mortems done by Strong and Teague, also 25 by Zabalotny and his staff, is as follows: the seat of infection is the lower portion of the trachea and bronchi; the bacilli penetrate the walls of the bronchi, and enter the peribronchial lymphatics, which in all cases were greatly enlarged. The glands at the root of the lungs were sometimes as large as walnuts. In the primary septicæmic form the bacilli enter the blood stream from the lymphatics in such numbers that death rapidly ensues before any lung lesion is pronounced, but every case becomes secondarily septicæmic before death. The pneumonia is of the lobular and not the lobar type, in other words a broncho-pneumonia; the glands occlude the small bronchi, causing cedema of the alveole, then follows proliferation of the alveolar cells and bloody expectoration.

11. The sputum, at first frothy, becomes later pinkish like anchovy sauce, and before death almost entirely blood.

12. Several disputed cases of tonsillar primary infection were reported, one of which developed a submaxillary bubo.

In closing this brief letter, which I feel is very fragmentary because the subject is so large, I would sum up my own experience as follows:

1. Please yourself about preventive vaccination, but if you wish it to be done, take 2 or 3 small doses of 2 c.c. of vaccine mixed with 3 c.c. of serum, at intervals of a week.

2. An efficient mask offers absolute protection. The mask must be made of two layers of gauze, with an inch thick pad of absorbent cotton in the middle, covering the face from the eyes to below the chin, and tied at the back of the neck. The eyes are protected by goggles. This acts as a filter. Antiseptics on the wool are unnecessary, but were used, as Wu Lien-teh used to say, on the principle that a "good stink" inspires confidence in the minds of your sanitary coolies, etc.

3. No physical sign other than bloody expectoration was constantly reliable.

After the first 24 hours, if the cases was primary septicæmic, the temperature was always subnormal, and similarly in many cases just before the sputum became bloody,
The rapid pulse was by no means always present.

4. No known case recovered.

5. If the bacillus pestis enters the body through the skin, bubonic plague is produced. If the bacillus pestis enters through the respiratory tract, pneumonic plague is produced.

These experiments Strong and Teague frequently repeated and demonstrated on many different animals.

Yours sincerely,

W. H. Graham Aspland.

P. S.—You know probably that myself, Steuhouse, Young and Score-Brown were decorated with the Double Dragon, 3rd degree, first class, for our plague service.

TSAO SHIH, Oct. 6.

To the Editor of

"The China Medical Journal."

DEAR MR. EDITOR: Salvarsan has been much derided, and from what Salvarsan, but very little used in China. I have tried all the various ways, and have finally taken to the intravenous injection. I first tried acid injection into the muscle; the result was very good, and the condylomata cleared up in a few days, but the poor patient slept (or did not sleep) on his face for a week till the gluteus was usable again.

Next I tried subcutaneous injection; the effects were also good, but a painful spot remained for several days, not nearly so painful as the acid method; now I use the intravenous injection. The last patient I did ten days ago; he came with his face covered with scabs; you could diagnose him half-way down the street. He had great sores on his thighs, deep under-mining sores that smelt very powerfully. He paid his 6,000 cash. We prepared as follows: one glass stoppered bottle with a mark for 300 c. c. = about 9 or 10 oz.; in it were 50 glass beads boiled clean; poured in about an ounce of warm water that had been poured out of the kettle through wool in a funnel; there was salt on the wool, enough to make normal saline solution, 43 grains to the 300 c. c. of water. To the ounce of saline in the bead bottle we added the Salvarsan 0.6 grms., powder just opened; rattled the beads till it was a clear solution; added 23 mins. of NaOH sol. (strength of 1 ½ oz. to 10 oz. of water); a cloud formed, which melted on more shaking. You may need 2 or 3 more mins. of the NaOH if it will not clear up. Finally add salt solution to the 300 c. c.; mark and shake and see it is all clear. Rapidly prepare the patient's arm (it was painted with tincture iodine before); cut down under novocain and find a vein; slip threads under it, snick it open, and stick in the small glass tube of a Horrock's infuser. It has four feet of rubber tubing attached, and on the other end a glass funnel held by a boy standing on a chair; you first fill the tubing with salt solution and while it is running stick the glass tube into the vein, then pour in the Salvarsan solution and keep air out. It goes in quite painlessly and should be about 100° warm; when it is finished end up with more saline solution; then tie up the vein and close the wound. After all this, which is simple as A. B. C., the patient laid down. In ½ hour he had "malaria," afterwards was sick, next day had fever and didn't eat, next day was "kao liao." In three days his scabs were gone, and on this the tenth day his thighs are clean, ulcers just closing up, a simple miracle. And to-morrow, the
eleventh day, his sister is to be done; she has paid her $8,000 cash; we pay Merck 7s. for 0.6 grms.; she will only use 0.4 grms = only 200 c.c. of the above solution, and we shall make something on the leavings for Lazarus. I strongly recommend this new drug with my limited experience; I have had some twenty cases. One cripple was carried in on a bed, a syphilitic boy; voiceless with a syphilitic throat, and it hurt him to swallow. On the eighth day he went off carrying his bed on a pole and shouted out a hearty goodbye, after having had a loud conversation over his rice money. He had a fearful rigor 1/2 hour after the inoculation. He said seven devils were giving him a fearful shaking; he had no other sequelae, however.

Yours truly,
E. F. WILLS.

To the Editor of
"THE CHINA MEDICAL JOURNAL."

Dear Mr. Editor: At the Hankow Medical Conference last year not a little valuable time was spent in trying to arrange that the papers for the next Conference might be in the hands of the members before the sessions begin, so that there might be more time for open discussion. To myself, and others who do not live near large centres where there are Medical Associations, I believe the discussions were the most valuable and helpful part of the conference; for we can read the papers in the C. M. JOURNAL, and grasp their contents more thoroughly than during a reading at the session. We therefore earnestly hope that at the succeeding Conferences there may be more time for questions and discussion.

May I offer a suggestion, which, as far as I remember, was not brought forward at the Hankow Conference. It is that several, as many as possible, of the papers be published in the number of the C. M. JOURNAL previous to the Conference in time to reach most of the members before they assemble. They will then be better prepared to discuss the papers, and more time will be available for discussion. This of course necessitates the papers being sent in about two months earlier. But if this suggestion be adopted by the Conference Committee, and a notice to this effect be inserted in the next number of the C. M. JOURNAL, there would still be ample time for the preparation of the papers.

May I also suggest that there be papers and especially discussion on some practical subjects, which though they might not help much in the advance of medical science, or look very attractive on a printed programme, would materially increase the efficiency of work in ordinary medical mission stations. Subjects such as:—Chinese diet in disease; management of hospital servants, and arrangement of work; hospital sanitation and disposal of refuse; dispensing and pharmacy methods; and out-patient routine. For instance: How do some doctors manage to get through one hundred or two hundred out-patients in a half day? I can only see fifteen or twenty an hour, and some of them not thoroughly. Have they any methods that economize time and save labour which they could pass on to us?

Though the investigation of rare diseases is an interesting change in the monotony (?) of our work, and may bring us more prominently before the medical world, yet it is not likely to do a tenth part the
amount of good that would follow a better understanding of how to treat such common and even humdrum things as tubercular sinuses, trachoma, or even chronic ulcers.

Our first duty and constant aim is surely to do that which will produce the maximum of good. Some whose modesty or lack of leisure prevents them writing articles like Dr. Roys' very practical and helpful one on "Some Simple Pharmacy" would probably in an open discussion pass on useful hints on the above-mentioned and kindred subjects.

Yours sincerely,

Fred H. Judd.

Yungchowfu, March 8th, 1911.

To the Editor of
"The China Medical Journal."

Dear Editor: In illustration of what might appear under "Hospital Notes," may
Locally made Appliances. I draw attention to an inexpensive and efficient sterilizer for ward dressings. It was made for me locally, on the suggestion of Dr. Heyward of Packing, and has been in use for some time. It is not too much to say that its use has revolutionised the practise in this hospital; or that its routine use for all cases has done more to instil an instinctive asepsis into the minds of the staff than any other, possibly than all other factors. I think that those who already use it will bear me out.

The sterilizer is of copper. It consists simply of a water container; a steamer with a perforated bottom, which fits with a rim outside of the container; and an ordinary cover. In use the steamer is lined with a simple cotton cloth. The dressings prepared overnight by the nurse in charge of the ward, are done up in little sausage-like rolls, one roll specially for each patient. A sterilizer of the above dimensions will take about a dozen rolls. The whole is sterilized for half an hour immediately before use, the dressings being already nominally sterile before being put up.

At the time of dressing, the contents of the sterilizer are handled with all the precautions of the operating theatre. Each patient's name is on his roll, and that roll alone is removed, to be opened in an aseptic basin. Approximately the requisite dressings for the case are there, including sponges, gauze, drainage tubes, cotton-wool, etc. What is left over is put aside in a clean special basin, to be used in the surgery. The wrappers, about the size of a lady's pocket handkerchief, are sterilized, and used again next day.

The same results can be got with a still more inexpensive outfit, an openwork plaited bamboo container, with 3" legs, constructed to fit into the ubiquitous kerosene tin. A double lining of cotton cloths is all that is necessary, and the whole thing, when sterilized, can be taken out of the tin, and carried to the ward for immediate use. The legs keep the dressings above the water level in the tin, and enable the container to be placed on a table without fear of contamination.

The nail-brush for the surgeon's hands is sterilized at the same time. Also, if the hospital cannot rise
Correspondence.

421

to ether soap, a large test tube of strong soap solution.

The sterilizer water supplies an addition to the hot water needed for the lotions.

The whole heat is supplied by an ordinary Primus oil-stove. One would be glad to hear of any other method of supplying heat that will be more economical, without being ruled out of court as too cumbersome and uncertain.

A small sterilizer for instruments is an inevitable accompaniment of every surgery. One has found it very convenient to add a steaming container by way of cover. This ensures an ever-ready supply of aseptic dressings, abscess pluggings, etc., for current minor operations. A similar small sterilizer is invaluable for eye work. Made from oil-tin material they last for years, and cost a few scores of cash.

Geo. Hadden.

Chemulpo, Korea.

To the Editor of "The China Medical Journal."

Dear Sir: I wish to describe a method which I have lately used for fixing limbs for long periods, as the materials are at hand for all in these parts and it is simply made and seems effective.

I first used it after an operation for excision of the knee. Poroplastic material is costly, leather also almost prohibitive in cost here, and I have not had much success with plaster of Paris, which, perhaps because of the dampness of the summer, does not seem to set well.

All that is required is a number of ordinary gauze bandages, starch, a little unabsorbent cotton wool (I use the native kind employed for padding winter clothes), and some strips of thin iron. These latter are exactly supplied by the bands used for fastening bales of cotton goods and must be easily obtained in any part of the east.

I get four pieces of this iron and cut them to the length required for the splint. They have then to be moulded to the limb and marked so that their respective positions and the distal and proximal ends can be at once recognised. I think it is important that they should not be applied to the limb in front and behind, but in the diagonal lines, lying antero-external, antero-internal, postero-internal and postero-external. The bands can be readily bent to fit the limb exactly, but the ends should be bent well out so as to avoid any risk of chafing, I do this by putting my heel on the strip about one and a half inches from the end and giving a good jerk.

When the strips are prepared and any dressing which the limb may require has been applied, a thin layer of the cotton wool is lightly bandaged over the whole part to be enclosed by the splint, leaving a little to project at the ends. One of the strips is then adjusted and a few turns of bandage fixes it. Thin starch paste is freely spread over the whole of the bandage and the other strips are similarly secured in place. Care must be taken to soak all the bandage used with starch, and enough bandages must be used not only to secure the strips, but to give a firm thickness of at least three-eighths of an inch. The starch will take some time to dry and needs the help of hot water bottles, but slowness does not matter at this stage. It is as well, if it be a leg, to sling the limb while drying,
or the dorsal parts may lose their starch.

When the whole is quite firm and dry, the splint can be removed by carefully cutting it down anterially and posterially. The cut edges are then trimmed up with some more starch, as are any weak parts, and dried, after which the two halves can be applied and bandaged on. This forms a very firm splint which can be at once removed with almost no trouble for dressings or cleaning.

H. H. WEIR

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**Personal Record.**

**BIRTHS.**

At Kuling, May 8th, to Dr. and Mrs. M. J. EXNER, (Y. M. C. A.) a son (Willard Bishop).

At Taichowfu, September 24th, to Dr. and Mrs. J. A. ANDERSON, C. I. M., a daughter (Elizabeth Grace).

At Seven Kings, Ilford, Essex, October 5th, to Dr. and Mrs. W. A. TATCHELL, Wesleyan Mission, Hankow, a son.

At Pekin, October 11th, to Dr. and Mrs. J. M. STENHOUSE, Un. Med. College, a son.

**MARRIAGES.**

At Chicago, September 27th, Dr. MARTIN EDWARDS, Harvard Medical School to Miss ETHEL HOOPER.


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**ARRIVALS.**

At Shanghai, September 30th, Dr. ROSA W. PALMBOURG, Seventh Day Baptist Mission, Shanghai.

October 8th, Dr. W. H. JEFFERYS and family, and Dr. H. B. TAYLOR returning, both of A. C. M., Dr. ERNST F. WITT from Germany, C. I. M.

October 14th, Dr. H. WOODS and family returning, Southern Pres. Mission.

October 27th, Dr. and Mrs. H. T. WHITNEY (ret.), A. C. F. M. of Foochow, Dr. and Mrs. C. E. TOMPKINS (ret.), American Baptist Mission, Suifu, Sze.

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**DEPARTURES.**

From Shanghai, October 3rd, Dr. S. L. KOONS, M. E. M., for America.

October 4th, Dr. and Mrs. R. C. BEEBE, M. E. M., for America.
### Contents of No. 1. January, 1911.

**Original Communications:**

- Les Épidémies Pesteuses ... ... *Par M. le Dr. Abbatiucci.* 1
- Union in Medical Education ... ... *By R. T. Shields, M.D.* 17
- The Opium Habit ... ... ... *By Webb Anderson, M.D.* 23
- The Need of a Hospital in North China for the Mentally Diseased ... ... ... *By J. J. Mullowney, M.D.* 28
- Chronic Mercury Poisoning *By James L. Maxwell, M.D.* 33
- Post-Rectal Tumour ... ... ... *By W. H. Jefferys, M.D.* 35
- Imaginary Cures for Imaginary Diseases—*British Medical Journal.* 36

**Reports of Customs Surgeons:**

- Report on the Health of Chinkiang for the Six Months ended 30th September, 1910 ... ... ... *By Dr. M. Urbânek.* 37
- Report on the Health of Changsha for the Six Months ended 30th September, 1910 ... ... ... *By Dr. Edward H. Hume.* 40
- Report on the Health of Tengyueh for the Half-year ended 30th September, 1910 ... ... ... *By Dr. N. Chand.* 43
- Report on the Health of Ichang for the Six Months ended 30th September, 1910 ... ... ... *By Dr. Andrew Graham.* 46
- Prevention of Malaria ... ... ... ... ... ... *Exchange.* 48

**Editorial:**

- A Reminder ... ... ... ... ... ... ... ... 51
- Medical Journal in Chinese ... ... ... ... ... ... 54
- Association Notes ... ... ... ... ... ... ... ... 55
- Publication Committee Notes ... ... ... ... ... ... 57

**Branch Reports:**

- Korea Branch ... ... ... ... ... ... ... ... 59
- Central China M. M. A. ... ... ... ... ... ... 60

**Nurses' Department:**

- Examinations for Chinese Nurses ... ... ... ... ... 61

**Correspondence:**

- What is to be the Pharmacopoeia? ... ... ... ... ... 62
- Betanaphthol ... ... ... ... ... ... ... ... 63
- Union Medical College Examinations ... ... ... ... ... 64
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Contents of No. 2. March, 1911.

Original Communications:—

Sanatoria for Treatment of Tuberculosis. By P. J. Todd, M.D. 65
Some Clinical Phases of Tuberculosis. By W. H. Dobson, M.D. 71
Suggestions for Tracts on Tuberculosis. By J. G. Meadows, M.D. 76
Suggestions for an Anti-Tuberculosis Crusade in Canton, China ........................ By Wm. W. Cadbury. 80
Les Épidémies Pesteuses (Concl’d.). par M. le Dr. Abbattucci. 87
Inquests in China ........................ By Edward Merrins, M.D. 93
Some Advances in Surgical Practice.

By B. M. Livingstone Learmonth, M.B. 100

Schistosoma Japonicum Infection in an American Child.

By O. T. Logan, M.D. 104

Hints on Litholapaxy ........................ By Fred H. Judd, M.B., B.C. 109
On the Use of Argyrol in Ophthalmic and Uro-genital Inflammations

By Harold Balme, F.R.C.S. 111
Out-patient Notes on a Series of Schistosoma Japonicum.

By E. F. Wills, M.B., C.M. 114

In Memoriam:—

The Rev. W. Riddel, M.A., M.D. ........................ P. B. C. 117
Arthur Frame Jackson, M.B. (Cantab.), D.T.M. ........................ 118

Editorial:—


Book Review:—

The Diseases of China ........................ H. C. P. 125

Branch Reports:—


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Contents of No. 3. May, 1911.

Original Communications:—

Notes on the Surgery of Tuberculosis. By E. H. Hume, M.D. 137

The Round Worm (Ascaris Lumbricoides). By J. Preston Maxwell, M.B., F.R.C.S. 146

The Missionary Side of Our Work. By George A. Huntley, M.D. 154


Research Report ... ... By James L. Maxwell, M.D. 166

Injuries of Nerves ... ... ... By W. Phillips, M.D. 173

The International Plague Conference.... ... ... ... ... 182

Papier Maché Casts ... ... ... ... ... E. M. M. 202

Editorials:—

The International Plague Conference ... ... ... ... ... 204

Book Review: Technical Terms ... ... ... ... ... 205

Hospital Reports ... ... ... ... ... ... 206

Correspondence:—

Union Medical School, Canton ... ... ... ... ... 210

Asthma ... ... ... ... ... ... 211

Kala Azar Infantum ... ... ... ... ... ... 212

Plague Bacillus ... ... ... ... ... ... 213

Vesical Calculus ... ... ... ... ... ... 213

Sph. Japou. in Dogs ... ... ... ... ... ... 214

Necrosis of Femur ... ... ... ... ... ... 215

Personal Record ... ... ... ... ... ... 216
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Contents of No. 4. July, 1911.

Original Communications:—

Case of Abdominal Streptotrichosis. \(\text{Arthur F. Cole, M.R.C.S.}\)
\(\text{George J. Evans, M.R.C.S.}\) 217

An Easy and Usually Successful Method of Skin
Transplantation 221
\(\text{C. Heman Barlow, M.D.}\)

Peculiar Phagedenic Ulceration of the Toes. \(\text{O. T. Logan, M.D.}\) 224

Typhoid Fever 227
\(\text{E. H. Hume, M.D.}\)

Ligature of Left Common Carotid. \(\text{Cecil J. Davenport, F.R.C.S.}\) 232

Abdominal Abscess for Ten Years, Following Abortion.
\(\text{Allen C. Hutcheson, M.D.}\) 233

Case of Tetanus Treated with Carbolic Acid. Recovery.
\(\text{H. H. Weir, M.R., M.R.C.S.}\) 236

Customs Surgeons' Reports:—

Report on the Health of Tengyueh 238
\(\text{Dr. N. Chand}\)

Report on the Health of Wenchow 241
\(\text{Dr. E. Wilmot Smerdon}\)

Editorials:—

Dr. Dugald Christie, C. M. G. 244

Where is the Committee? 244

An Omission 246

Executive Committee 246

Book Review: 248

Graduation Ceremony of Union Medical College, Peking 250

Union Medical College, Peking, Annual Report for 1910-1911 254

Report of Peking Hospital, 1910 263

Medical and Surgical Progress: 267

Nurses' Department 269

Correspondence:—

Saline Infusion 271

Kala-azar Infantum 272

Further Notes on the above 273

Operation for Vesical Calculus 274

Preparing Catgut 275

Personal Record 276

Want Department 276
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The China Medical Journal.

Contents of No. 5. September, 1911.

Original Communications:—
A Contribution to the Nosogeography of Northern Korea. Ralph G. Mills, M.D. 277
Public Health and Sanitation .... John J. Mullowney, M.D. 293
Malaria.... .... .... .... .... .... .... .... .... .... .... .... .... .... .... F. M. Wright, M.D. 302
Schistosomiasis (Jap.), and So-called Urticarial Fever.—
Their Identity ..... Alexander C. Lambert, M.D., C.M. 308
A Family of Cretins .... .... .... .... .... .... .... .... .... .... .... .... .... .... B. Score Brown, M.B. 312
Description of Mission Hospital, Kwangju, Korea. R. M. Wilson, M.D. 313
Opening of the Union Medical College, Tsinan. Rev. William P. Chalfant. 316
Union Medical College, Peking .... .... .... .... .... .... .... .... .... .... .... .... .... .... E. J. Stuckey. 319
Some Practical Notes on the Use of Rubber Gloves. Arthur Neve, F.R.C.S.E 322

Customs Surgeons' Reports:—
Report on the Health of Changsha. Dr. Edward H. Humé's. 325
Report on the Health of Chungking. Dr. James H. McCartney's. 327
Report on the Health of Ichang .... .... .... .... .... .... .... .... .... .... .... .... .... .... Dr. Andrew Graham's. 329

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Contents of No. 6. November, 1911.

ORIGINAL COMMUNICATIONS:—

Medical Experiences in Southern Hunan.
By Ernest C. Peake, M.B. 357

Pneumonic Plague: Preventive Measures.
By R. A. P. Hill, M.B. 367

The Use of Chromosantonin in the Treatment of Intestinal Affections of the Tropics.
By Chas. Begg, M.D., and J. Preston Maxwell, M.D., F.R.C.S. 374

Clinical Cases .... ... ... ... By Walter Phillips, M.B. 384
Tumor of the Mesentery .... ... ... ... By G. Wilkinson. 389
Abscess of the Spleen .... ... ... ... 393

CUSTOMS SURGEONS' REPORTS:—

Report on the Health of Kiukiang. Dr. Alexander C. Lambert's. 396
Report on the Health of Chinkiang .... Dr. M. Urbanek's. 397

EDITORIAL:—

What Next ? .. ... ... ... ... ... ... 401
Gratias Ago ... ... ... ... ... ... ... 402
The Next Conference ... ... ... ... ... 402
The Famine Committee ... ... ... ... ... 403
The Far Eastern Association of Tropical Medicine ... ... 403
Publication Committee ... ... ... ... ... 406

BOOK REVIEWS: ... ... ... ... ... ... 407

BRANCH REPORTS:—

Korean Branch ... ... ... ... ... ... ... ... 411
Fukien Branch ... ... ... ... ... ... ... ... 412

MEDICAL PROGRESS ... ... ... ... ... ... 413
HOSPITAL REPORT ... ... ... ... ... ... 413

CORRESPONDENCE:—

The Plague Conference ... ... ... ... ... ... ... 416
Salvarsan ... ... ... ... ... ... ... ... 418
Enhancing the Value of the Medical Conference.... ... 419
Locally made Appliances ... ... ... ... ... 420
Reinforced Starch Splints ... ... ... ... ... 421

PERSONAL RECORD ... ... ... ... ... ... 422
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