

The China Medical Missionary Journal

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Original Communications.

[No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editor on the first day of the month preceding that in which they are expected to appear. A complimentary edition of a dozen reprints of his article will be furnished each contributor should he so desire. Any number of reprints may be had at reasonable rates if a *written* order for the same accompany the paper.]

PORTER ON THE INDICATIONS TO BE DRAWN FROM THE URINE AS TO THE SAFETY OF ANÆSTHETICS.*

At a meeting of the Clinical Society of the New York Post-Graduate Medical School, Dr. William H. Porter presented a paper upon this subject which contains some original and well-supported views as to the action of anæsthetics, and the indications as to their safety presented by the state of the urinary excretion.

After describing the characteristics of normal urine and the transmutation changes which regularly occur in it when exposed to the air, which are indicative of a normal state of the system, and one in which the nutritive vitality is well maintained, he states that patients presenting such a normal urinary excretion bear etherization and chloroformation without ill effects as a general rule. When, however, the quantity of urine being normal, or below the standard amount, the color is pale and the density low, it indicates that digestion and absorption are imperfectly effected, and that nutrition is below the normal standard, and vital activity deteriorated. Patients in such instances, while they do not necessarily succumb to the damaging effects of anæsthetics, may not bear the etherization or chloroformation well, and often require stimulation before the administration and during the anæsthetic period. Chloroform in these cases is equally as safe as ether.

If the urine is scanty, high-colored and of high density, it is usually associated with a deficiency of urea and an excess of uric acid, and often contains a number of other by-products, all of which are due to the incomplete oxidation of the proteid molecule. The urine may be normal in amount, of normal or higher color, yet the density be abnormally high, but with a diminished amount of urea.

* The Post-Graduate, July, 1893.

The urine may also be abundant in quantity, light in color, deficient in urea, and still of high density. This is usually due to the presence of glucose with its molecular weight of 180. All these conditions are clearly explained by a study of the true chemical composition of the urine and the molecular structure of the urea, uric acid and the other by-products of proteid tissue waste.

When the normal or highest oxidation of the proteid molecule is maintained the most perfect end-product is urea, a nitrogenous body of great solubility and low molecular weight. Therefore normal urine has the density already described, and readily undergoes the transmutation changes which speedily result in the formation of the ammonio-magnesium phosphate crystals in abundance.

He believes that the scanty flow of urine, of high color and density, and a deficient production of urea, is due to incomplete oxidation of the proteid molecule with the formation of uric acid, lactates, oxalates, etc., all of which have a higher molecular weight than urea. For instance, the molecular weight of urea is 60, that of uric acid is 168, and its urates 190. In other words, each molecule of uric acid is 2.6 times heavier than urea; and the urates, 3.16 times heavier. This, however, is not so bad as are some of the other conditions, as the uric acid molecule carries out of the system twice as much nitrogen as urea. But when the uric acid is present in abundance at the expense of the urea, it indicates incomplete oxidation and impaired nutrition, with some granular change in the liver, kidneys and glandular organs. Such cases bear anæsthetics poorly and often succumb a few days later.

If to the urine containing uric acid there is added the oxalates which have a molecular weight of 129, and the lactates with their molecular weight of 112, the density of the urine will be still higher. These by products indicate a still lower state of oxidation and a greater loss of inherent vitality. When this is the case the probabilities regarding anæsthesia are still more uncertain.

He calls attention to still another variety of scanty urine of high density which is indicative of the lowest grade of nutritive vitality, and in which all the glandular organs are very much impaired, and yet albumen casts and glucose may not appear in the urine. It is that variety in which the nitrogenous waste that should pass out of the body through the biliary secretion as bile salts and coloring matters pass out through the renal organs. When this is the case the urine, unless very abundant in quantity, is very dark in color, the density from 1030 to 1040; and it may rise as high as 1060. The high density in these cases is explained by the great molecular weight of the bile salts and coloring matter as compared with urea. The glycocholate of soda, for instance, carrying only one atom of nitrogen, or one less than urea,

has a molecular weight of 487, and, therefore, is 8.11 times heavier than urea. The taurocholate of soda, also containing only one nitrogen atom to the two in urea, has a molecular weight of 537, and is, therefore, 8.95 times heavier than urea.

The bile coloring matters also have a high molecular weight. That of bilirubin being 286 and the biliverdin 322, the former is, therefore, 4.76, while the latter is 5.39 times heavier than urea. Urine of this composition indicates a very great disturbance in the assimilative powers of the system, and indicates a general retrograde change in all the glandular organs and tissues of the body.

It is the opinion of the author that etherization and chloroformation followed by operative interference in cases of this kind are very apt to terminate fatally. Absence of albuminous casts and glucose have led to the supposition that the patient was in a good condition for etherization. He has made the necropsy in a number of fatal cases of this nature, in which the action of the ether was just sufficient to cause a rapid dissolution of the glandular organs, toxic symptoms and speedy death.

A study of this class of cases has led him to believe that when the urine contains an abundance of these by-products of proteid oxidation with a high specific gravity and no albumen casts or glucose, the patient is still in a very precarious condition, and often more likely to succumb under the anæsthetic than when that state of sub-oxidation exists which produces albumen and glucose. Of course, when casts are present it indicates a more marked retrograde change in the kidneys, and chloroform, he thinks, is to be preferred to ether. According to Dr. Porter, these unobserved glandular changes cause most of the fatal results in surgery. Were it not for these weak points in the system, almost every operative case ought to recover, inasmuch as the mechanical part of surgery has been brought by antiseptics almost to absolute perfection.

The author then goes on as follows, to show how the anæsthetic is a factor in producing these bad results, and gives a very clear statement of the physiology of ether and chloroform anæsthesia.

Ether is an hydro-carbon, *hydroxyl* derivative, being composed of carbon, hydrogen and oxygen ($C_4 H_{10} O$); while chloroform is an hydro-carbon, *chlorine* derivative, being composed of carbon, hydrogen and chlorine ($C H Cl_3$).

In using either ether or chloroform, anæsthesia cannot be produced so long as the requisite amount of oxygen is supplied to the system.

The activity of the medullary centres is dependent upon the active supply of fully oxygenated blood. Therefore it is but just to assume that the chief factor in producing the anæsthetic state, both with the ether and the

chloroform, is the direct result of the displacement or shutting out of the oxygen supply from the respiratory passages, and thus from the blood, by the anæsthetic used. This is unquestionably true with the nitrous oxide ($N_2 O$), also with ether and chloroform.

This taking away from the system of the great heat-producing element, which is indisputably the prime agent in stimulating the whole animal chemistry into action and maintaining its normal activity, is the chief function of the anæsthetic. At the same time there is rapidly induced an imperfectly oxygenated state of the blood, so that the natural stimulation of oxygenated blood upon the cardiac, respiratory and vasomotor centres is reduced to a minimum point compatible with a continuance of the cardiac and respiratory actions.

When the natural peripheral irritation of the centripetal nerves by the heat produced through the oxidation of the food products is suspended or totally abolished, and the oxygen in the blood has been reduced until only the cardiac and respiratory centres are capable of being irritated sufficiently to keep only the heart and respiration in motion by this low percentage of oxygen in the blood, the patient is thrown into a quiescent and dead state, commonly called anæsthesia.

From this condition the patient cannot be aroused except by restoring the oxygen supply, re-establishing the peripheral heat production, and raising the percentage of oxygen in the blood to the normal standard until it will normally excite the central cells into greater activity. In some instances, when the anæsthesia is prolonged or pushed too strongly, the sub-oxidation of the body is carried to such a profound degree that oxidation cannot be re-established by natural means. When this is the case, extraneous heat has to be applied to excite the reflex activity of the nervous mechanism until oxidation and natural heat-production can be re-established to keep up the nerve action.

The author, following this line of argument a step further, says that only one conclusion can be drawn, namely, that the administration of ether, for the purpose of producing anæsthesia, immediately develops within the system a state of general sub-oxidation directly in proportion to the amount of oxygen that is shut out of the air passages.

This absence of oxygen in the blood induces general mal-nutrition by arresting oxidation of the proteid fat and glucose molecules of the food-stuffs. As a secondary result, the products of tissue-waste are at first decreased, then incompletely formed and, in many instances, are irritating or poisonous in character. After the anæsthesia they are abundant and incompletely formed.

He claims from these facts that it becomes apparent at once that the system is chemically damaged by ether anæsthesia, mal-nutrition induced,

extra strain imposed upon the physiological mechanism, and all the glandular organs called upon to perform extra work upon a defective nutritive supply. When this stage is reached all the functions are abolished except the cardiac and respiratory. In a perfectly normal individual this extra strain can be borne almost with impunity for hours.

When the physiological economy is below par, the reverse often holds true, and alarming and fatal consequences are witnessed. In this latter case there is often developed immediately, or within a few hours after the anæsthesia, symptoms which are called "septic," and are followed by death.

Since the introduction of antiseptics, and by careful post-mortem observation, it has been found that these so-called septic symptoms are developed without any septic infection through or from the wound.

He believes that they are the results of the damaging effects upon the system resulting from the sub-oxidation induced by the anæsthetic which has shut out the oxygen and arrested glandular action. This results in rapid retrograde changes in the epithelial cells of the glands, with a retention of the excretory products within the system, which should now, more than ever, be eliminated.

Thus ether causes the death of a large number of cases, but in a day or two after the anæsthesia, rather than upon the operating table.

In those cases in which there exist in the urine these positive evidences of retrograde changes in the glandular organs of the body and a state of universal sub-oxidation, there is reason to suspect unpleasant symptoms, or even death during anæsthesia. But in most instances death is delayed until a few hours or a day or two after the operation; and the fatal results are brought about by the excretory organs in their previously damaged condition being unable to cope with a further state of sub-oxidation, and the augmented demand upon their fundamental activity. At this stage albumen and casts usually appear when not present before.

He very aptly observes that this delay in the fatal result takes the odium off the ether as compared with chloroform, while the ether still remains equally responsible, and probably causes as many if not more deaths than chloroform.

Owing to the great volatility of ether, the heat of the body rapidly drives it from the air passages, so that it requires a considerable volume and some time to displace the air from the lungs and cause the sub-oxidation, arrest of functions, and, finally, the condition called anæsthesia.

He gives still another reason why ether is slow in producing anæsthesia, namely, that it is a readily inflammable compound, and to a certain extent is oxidized in the epithelial structures of the respiratory passages, with the production of carbon di-oxide and water, and a definite yield of heat for each

gramme oxidized. Each gramme of ether consumed in this way requires for its complete oxidation 2.59 grammes of oxygen, or about the same as is required in the consumption of fat and alcohol.

This rapid oxidation of the ether also aids in shutting out the oxygen from the blood. But at the same time it generates considerable heat in the lungs, which irritates the peripheral ends of the centripetal nerves of the respiratory system. This explains why the respiration and circulation are well sustained during the primary stage of ether anæsthesia, and shows why the heart and lungs are not apt to fail early, as occasionally occurs with chloroform.

It also illustrates the apparent failure of the respiratory act as the anæsthesia deepens. The reflex action of the respiratory nerves is exhausted by this rapid and continuous production of heat, and at this stage the reflex respiratory irritation ceases to be a factor in keeping in motion the medullary centres. The respiratory centre has not yet accustomed itself to the method of irritation through the blood only. Now the deep pressure in the epigastric region, or the quick and forcible compression of the chest is just enough to keep the medullary centres active until they accustom themselves to the poorly oxygenated blood supply to keep up their motion.

By the aid of these physiological phenomena, it is clear that the heart and circulation must fail first in the poisoning effects of ether anæsthesia. The medullary centres are primarily kept in motion by oxygenated blood and are only secondarily influenced by reflex impulses; therefore, so long as blood containing the requisite amount of oxygen continues to reach the medulla its functional activity must continue.

The ether, mechanically, and by its oxidation in the air passages, deprives the blood of its requisite supply of oxygen, therefore, failure of the circulation in the medulla is the first chain in the depressing influences of ether anæsthesia.

Owing to the lack of the peripheral reflex stimulation and the previously overworked condition of the centripetal pulmonary nerves, as explained by the exhalation of the ether in the lungs, the respiratory centre is apt to be somewhat depressed as compared with the cardiac, so that when the two are compelled to depend exclusively upon the irritation of the imperfectly oxygenated blood flowing through the medulla for their activity, the respiratory centre usually fails to respond, while the cardiac centre continues to innervate the heart. If for any reason there is a previous exhaustion of the cardiac centre, it shows evidence of primary failure. Thus elucidating the contradictory evidence of the Hyderabad Commission.

He then takes up the subject of chloroform, which acts upon the same principle as nitrous oxide and ether by shutting out the air from the respiratory passages, and the oxygen from the blood.

Chloroform is a heavy liquid having a molecular weight of 119.4 to that of 74 for ether. It is easily and rapidly drawn into the air passages, and not being very volatile is not readily displaced, so that very much less chloroform is required to displace the air and shut the oxygen out of the blood than holds true when using ether.

The persistent retention of chloroform in the cavity of the respiratory chambers explains why a very little can be given at a time, and shows how a little crowding of the chloroform easily asphyxiates the patient and causes failure both of the heart and lungs. As the chloroform cannot be oxidized and made to yield heat like the ether, the failure of the heart and respiration comes suddenly. Before there is time to excite the respiratory and cardiac centres by extraneously applied heat, and re-establish the natural heat products by normal body oxidation, the centres have ceased to act forever.

He is of the opinion that intelligently and carefully administered this accident cannot occur, and the use of chloroform is just as safe as that of ether.

With chloroform this deprivation of the system of its oxygen can be accomplished without any expenditure of oxygen as occurs with ether, and consequently no extra heat is produced which irritates the system and aids in intensifying the sub-oxidation; in other words, properly handled, chloroform produces complete sub-oxidation quickly and with the least possible shutting out of the oxygen from the blood. Therefore, scientifically used in perfectly normal individuals, chloroform is less damaging to the animal economy, and much safer than ether. And, in fact, he claims that in perfectly normal individuals, if properly administered, ether and chloroform, while damaging the true physiological economy in producing anæsthesia, can yet be given with absolute safety.

Anæsthetics, however, are rarely administered to normal individuals; they are always more or less unsound, otherwise there would be no occasion to use these agents. Therefore an entirely different problem confronts us, and necessitates a thorough understanding of the physiological economy, and how to find it out through the urine.

After this thorough discussion of the action of the anæsthetics, Dr. Porter goes on to explain their bad effects as follows:

Ether, if given too quickly and too freely, may cut off the oxygen so completely as to cause instant death; this rarely happens. In other more or less pathological subjects, the rapid oxidation of the ether in the lungs wears out the irritability of the centripetal respiratory nerves in the lungs. The blood-vessels rapidly expand, which, together with a large production of water from the oxidation of the ether, induces a fatal œdema of the lungs.

Usually in the early stages of anæsthesia, the pulmonary blood-vessels

contract, but as the anæsthesia deepens they relax and with the water generated from the oxidation of the ether there is always a free flow of bronchial mucus, but not to a sufficient degree to produce any alarming symptoms.

Occasionally a rapid oxidation of a large quantity of the ether exhausts the oxygen supply, and, by over stimulating the centripetal nerves, and through these the central ganglion cells, causes a rapid exhaustion of the nervous system, followed by a sudden respiratory and cardiac failure and death.

Thus we have an explanation for the possible development of sudden death by ether anæsthesia.

He is, however, inclined to believe that more frequently death due to ether anæsthesia comes on after the administration, and is caused by the secondary glandular degeneration and consequent toxæmia induced therefrom.

Though chloroform has been found to be perfectly safe as a rule where properly administered, still there are a few cases that succumb suddenly when attempting to take chloroform and apparently without any satisfactory reason. Dr. Porter assumes that this never occurs in perfect states of health, but only in those that are more or less pathological.

He advances the hypothesis that these sudden deaths are due to an oxidation of the proteid molecule in the epithelial cells of the respiratory passages, which results in the formation of free ammonia (N H_3). This unsatisfied radical in the presence of the heat of the respiratory chambers and the free oxygen, results in the decomposition of the chloroform in one of three methods; all of which give rise to the formation of suffocating and poisonous gases; which fill the deeper air passages and suddenly and completely shut out the oxygen from the blood. Thus arresting life at once.

These chemical changes he gives as follows: C H Cl_3 plus N H_3 plus $\text{O}=\text{C O Cl}_2$ plus N H_4 plus Cl , or C H Cl_3 plus N H_3 plus $\text{O}=\text{C O Cl}_2$ plus $\text{N H}_4 \text{ Cl}$, or $2(\text{C H Cl}_3)$ plus $2(\text{N H}_3)$ plus $2(\text{O}=\text{C Cl}_4)$ plus $2(\text{N H}_4 \text{ Cl})$ plus C O_2 .

The following practical deductions are drawn from this chemico-physiological analysis of chemical phenomena:

(1) That ether and chloroform act upon the same principles, but with results developed by slightly different methods.

(2) That both are capable of producing death at the time of the anæsthesia; chloroform more frequently than ether.

(3) That ether causes as many, if not more, deaths than chloroform, but the fatal issue is delayed until the patient has been removed from the operating table.

(4) That by a careful study of the density of the urine and its causes, we are in possession of exact information by which we can determine the precise nutritive condition of the system, and be forewarned as to the possible

outcome of the anæsthesia. It also enables us to judge which anæsthetic is best adapted to the individual case in question.

(5) We are taught that neither ether nor chloroform should be administered until the glandular organs, in their necessarily damaged states, are put in the best possible condition to endure this extra strain. When this is a general rule many cases that now prove fatal will be saved.

(6) It teaches that every public institution should have a paid physician who is competent to examine the urine, and determine through it the status of the physiological economy before giving the anæsthetic. It should also be the duty of this same physician to administer the anæsthetic, for he alone knows best which anæsthetic to select with a given condition of the system, and is also better able to guide the patient safely through the anæsthesia than one who knows nothing of the constitution of the patient except from a second party.

(7) While it is clear that death in some instances is directly due to the primary effects of the ether and chloroform, and in others to secondary effects, it should not deter us from using them, but stimulate us to be more thorough masters of their actions upon the system, and thus to guard against their ill effects. When all this is accomplished, chloroform will probably hold the first place as an anæsthetic.



THE TRAINING OF MEDICAL STUDENTS.

BY GEO. A. STUART, M.D.

Dr. Kerr once said, "The education of physicians and surgeons for the people of this great empire is a subject of the utmost importance and one which may well engage the attention of the medical profession of the world." After all that has been written and said, and after the able papers read before the Conference of 1890, it would seem unnecessary to say anything more on this subject. But when we consider that from all that was then proposed so little has taken form, and especially that during the past three years nothing upon this subject has appeared in this Journal, the present writer may be excused for once more bringing the question before the medical missionary body, and for endeavoring to point out some of the dangers of the method at present pursued and at the same time making a few suggestions as to how it appears to him the matter might be carried to a successful issue.

Whether there is any desire among the Chinese for a Western medical education, or whether there is among the people any real demand for private

practitioners who use Western methods, are questions upon which there seems to be a diversity of opinion among medical missionaries. Certain it seems that a knowledge of the benefits of Western over native practice is spreading, and in that part of the empire in which the writer resides natives who profess a knowledge of foreign medicine, even though they may only have been students or coolies in a foreign hospital for a short time, usually are held in great esteem by the people until their spuriousness and lack of skill manifests itself. Many instances of this sort might be given, but it is only necessary to mention the fact as a proof that among the people a demand for well-trained physicians does exist. To save the reputation of our profession and in self-defence we will have to soon begin the systematic, thorough training of men in rational medicine, and by giving them a certificate at the completion of a proper course mark a distinction between them and the runaway student or ward coolie. The appreciation of foreign methods of treatment is undoubtedly growing with all classes in China, and it is also a well-attested fact that the native practitioner of Western medicine is given more license and is not so apt to be held responsible for failures as the old time native doctor. Whether this be true or not is a matter of little importance and does not affect the question of our duty as representatives of a higher, not to say a Christian civilization. A great amount of pioneer work remains to be done in this direction, and we must expect those who do it to undergo the discouragements and privations of pioneers. But this should not deter us from pushing forward the occupation of this field of usefulness. When we consider the great amount of suffering that exists in this great empire and the utter inadequacy of native methods of treatment, human sympathy and philanthropy alone would incite us to our utmost endeavors and to the use of the wisest methods to provide adequate relief for these ills. How much more then should we, who profess to be followers of the Great Physician, with faith in the ultimate triumph of truth and right, and in emulation of His example, use the only methods now known to give to suitable persons "power and authority to heal all manner of diseases!" So deeply are these principles implanted in the heart of the missionary physician that we find every one anxious to extend his influence and power for healing beyond the necessarily narrow circle of his own personal practice. And what more effective way to do this than by training the native in rational medicine?

One of the great dangers arising from the present system, or rather want of system, of medical training as practiced by the missionary physicians of China, is a lack of uniformity either in the length of course, the subjects to be covered by the course, the amount of proficiency required in each subject, hours and method of instruction, or requirements as to preparatory studies. Dr. Whitney's able paper read before the 1390 Conference covered these

points, and contained many valuable suggestions as to what should be done to attain uniformity in training students. But nothing has come of it, apparently from a lack of unity on the subject. Unity is the pre-condition to uniformity. In these days of democratic ideas it is difficult to attain unity without organization. So it seems to the writer that the first thing to be done is for all those who are expecting to actively engage in the work of medical teaching to form themselves into an association for interchange of thought, discussion of methods and courses, and finally the drafting of a uniform plan to which all will be willing to adhere. Such an association could decide what text-books are needed or desirable, and could encourage and direct the efforts of translators, compilers or authors. It would also give such an impetus and standing to the work of medical teaching in China as it does not now possess.

Another danger arises from too many being engaged in the work. Nearly every missionary physician, not to say every superintendent of a mission hospital, has students under his care. The writer appreciates how this work has been forced upon many from the necessity for trained helpers, as well as from application for medical training on the part of the Chinese themselves. But this state of affairs should not continue. Very few medical missionaries have the time to devote to systematic medical teaching; and unless it is done systematically, it would better not be done at all. The physician who desires to train students should devote himself almost exclusively to this work. The difficulties encountered are so great that it requires all of a man's thought and time to do all that should be done for the class. Then, as the instruction can be and should be carried on in the Chinese language, it is not every medical missionary who has a sufficient vocabulary for such teaching. And this fact is nothing to his discredit. Ordinarily the time of a missionary physician is so thoroughly consumed in practical work that one does not have the opportunity to acquire the specially technical vocabulary needed. The writer does not agree with those who think the recitation method of instruction better in every respect than that by lectures. A dry lecture, dealing much with statistics and technics, has no proper place before a medical class either east or west. But in our experience our classes have derived more good in a more practical form in certain branches from lectures than from recitations. Taking notes from lectures cultivates the habit of observation and original thought, which faculties are greatly lacking in the ordinary Chinese student. Certainly, the recitation method is for the teacher the easier of the two, when the difficulties offered by the language and the fact that scientific and medical nomenclature are in so unsettled a state, are considered. The necessity of having a vocabulary for didactic work will do much toward hastening the settling of these questions. But it is not neces-

sary for every physician to acquire such a vocabulary, because it is not necessary for everyone to engage in the training of medical students. If we can persuade medical missionaries that the slipshod manner of instruction commonly practiced is delaying rather than hastening the day of rational medicine in China, and that for this reason many now engaged in the work who have neither the time or opportunity for it should desist and leave it for those who will devote themselves to it, we will feel that we have done a good work. If denominational pride can be laid aside (and we believe that it can and will be by nine-tenths of medical missionaries), a more economical and judicious method of medical training can be adopted. As for example, one physician in a province might devote himself to the work, and to him all students could be sent, the expenses being borne in some way previously decided upon. Or better still, a first class medical school might be established either in Nanking or Shanghai. There is already a school in Hongkong for the south, and Viceroy Li has one in Tientsin, which may answer for the north; and if one were established in the Yangtse valley, it would cover all present needs. This plan is perfectly feasible. The writer fully believes that if a good working plan were set on foot, and such a school were started under some efficient method of control, the money for plant, outfit and endowment would be forthcoming. There are men of wealth both in the home lands and in the east who will give largely to a project of this kind, if a workable plan was insured them. Shanghai already has evidences of this fact, as witness the Hanbury School, the Margaret Williamson Hospital, and others. Shall we not soon have one good, well-equipped school established in the Yangtse valley to which medical missionaries of all denominations would give their hearty support?

Another very important danger to which attention should be called is that of using the student, before he has completed his course, as a helper, paid or unpaid. If unpaid, the writer has found it not only not profitable, but disastrous to the student and to all we wish to do for him. And if he is paid, the danger and disaster are increased in direct proportion to the amount of money he receives. Until he has finished his course creditably, a student should be kept where he knows himself to be simply a learner; and that his services in ward or dispensary, whatever they may be worth to him as a student, are from our standpoint valueless. And now that medical assistants with more or less training are becoming more plentiful, and nearly every physician is already supplied with the best help at present available, it is possible, if physicians will so decide, to keep young students out of the ward and dispensary and in the class room, until they have at least laid a foundation for practical work. For this reason it might be better if teaching were not done in hospitals, but in a separate school.

Again, there is a danger, and not an insignificant one, arising from a

number of undertrained men becoming scattered over the country, to the injury of the reputation of Western practice. It is true that these men have no standing among us as physicians, but the people do not know that, and it will be difficult to repudiate those who have been our students simply because they did not remain with us for a sufficient length of time, when we had nothing to offer them either in the way of a systematic course, or of evidence of the completion of such a course. We should give these foreign trained medical men a standing before their own people by requiring them to pass examination on a well graded course pursued in a well equipped school; such examination to entitle them to a diploma and admit them to a degree, as in Western lands. When this stage is reached, we can safely repudiate all non-graduates, whether students, native preachers or ward coolies, who aspire to become doctors. Our present recognition of undertrained men as in a sense physicians is sure to work disaster to us in the future.

A careful reading of all that has been written on this subject shows that there is no serious difference of opinion among medical missionaries in regard to the training of medical students. And where slight differences do occur, we believe that the magnanimity characteristic of our profession will carry us over every obstacle. The only thing that we have to fear is that "what is everybody's business is nobody's business," and that nothing will be done for want of some one to carry it through. Therefore, we solicit the hearty co-operation of the profession with anyone who will make the attempt to put medical teaching in China on a higher plane.

In regard to the ultimate result, there is no doubt. Aside from the heaven-born work of relieving suffering, the purely industrial side of this question appeals to us. Surely, there would be no more useful a man to the native Church than the successful Christian physician. And that they will be able to so establish themselves in successful practice admits of no manner of doubt. In the writer's own experience, men of capital have been anxious to secure these students as soon as they had completed their course, for the opening of a foreign medicine shop and doctor's office, paying them a salary and a percentage of the profits, the salary alone being more than mission hospitals are willing to pay their helpers. In order that these men may be made most useful to the Church, they should be encouraged to independence, and at the same time we should endeavor to impress upon them the duty of hearty co-operation in the support and spread of the Gospel. If foreign hospitals are very much multiplied in China, we may stand in the way of the best success of these men, on account of the indiscriminate charity practiced by these hospitals. The writer hopes to live to see the day when only true charity will be dispensed in the hospitals of this or any other land. Undeserved gratuities are degrading.

NOTES OF CASES.

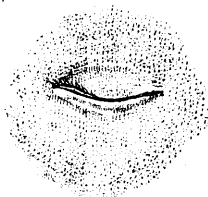
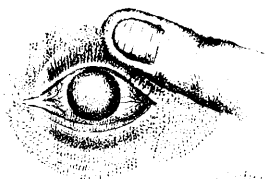
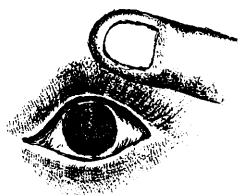
*Irido-Cyclitis with Degenerative Change, etc.*BY A. MORLEY, L.R.C.S., L.R.C.P., *Edin.*

Yang Tsung-chien, aged 51, coolie and native of Teh-ngan, presented himself on June 22nd, 1892, suffering from double iritis or cyclitis, beginning first in the left eye with intense pain, which extended all over the left side of his head. I adopted the usual treatment—atropine, blister and shade, but he did not treat me well. He would not come for his drops, was continually taking off his shade and at last went to a native drug shop, so that just before I came down to Hankow I refused to see him any more. When I came back I found the left pupil enormously dilated, in fact I could only see a bit of the iris which looked red: the pain had nearly gone, but occasionally came back on left side of head: slight ptosis in left lid: tension normal, quite blind, p. l. nil, by ophthalmoscope I saw nothing. On my return from a journey I found him just the same, but the last week or so I have suspected a little increase of tension.

He himself gives this history: Began seven years ago in left eye with inflammation, photophobia, lachrymation, itching but no pain, sight was dim, then right eye got bad for a week in same way: then both eyes well. Says he saw no haloes. These attacks were repeated sometimes once, sometimes twice a year. Says he never had pain: between attacks says his sight was all right. He had been free from an attack for two years, when the last attack, last year, commenced. In tenth month of last year his left eye commenced with lachrymation, dimness of sight and pain.

Present condition.—Ptosis of upper lid, p. l. nil, pupil widely dilated, except a small portion at lower and inner segment. The conjunctiva is slightly pinkish and several enlarged veins are seen over it. The media of the eye are a bottle green, the cornea is fairly clear, but there are hazy spots on the temporal side. Tension = $\times 1$. Now has no pain or symptom whatever. By ophthalmoscopic examination simply a slight red reflex can be obtained. The cornea is anæsthetic but not fully so. Case now thought to be one of glaucoma. He refused operation, so tried eserine drops which did not seem to have the slightest effect on the eye. Occasionally he had pain in it and preferred to wear a shade, as he said, if he did not, the other eye was somewhat painful.

Dr. Hodge appends the following note:—



February 12, 1894, one year and a half after last note the man came down from Teh-ngan, Dr. Morley being absent. I was away when he came. When admitted had photophobia, lachrymation and the eye as well as lids were inflamed. Soon went down under cold applications. Says the left eye has got worse several times since last seen but not the right eye.

Present condition (14 days later seen by me).

Now has no photophobia, but lachrymation. No pain, but has some uneasiness over left side of head (hemicrania). Ptosis more pronounced, but there is no paralysis of intra-orbital muscle, all movements of eye being free. The anterior chamber is deepened, the pupil widely dilated, iris mostly invisible except at the outer and lower parts where a ring of darkness, of purplish colour, exists. The pupillary area is occupied by a yellowish solid looking substance, which is not unlike old and thick pus. The cornea has lost its smoothness and is seen by reflected light to be dotted with a number of little pits, but I cannot feel sure that these are in part membrane of Descemet. A few veins run on cornea, especially at the upper part, but otherwise not inflamed. There is ciliary congestion, but no pain on pressure over that region.

March 8. Left cornea is very anæsthetic. To-day I notice at lower part of cornea a reddish staining as if from hæmorrhage, it seems both over the cornea and behind it. There are one or two spots like punctata keratitis as well.

The diagnosis being somewhat doubtful, though inclining to cyclitis with degenerative change, I forwarded the drawings and history to Dr. Milles of Shanghai who acquiesced in the diagnosis of "irido-cyclitis leading to deposit of cicatricial tissue in the ciliary body and degenerative change there and possibly in the lens."

Dermatitis Venenata.

By JAS. H. MCCARTNEY, M.D.

"Duhring" in his work on skin diseases says: Under this head are included numerous inflammatory conditions of the skin, resulting from contact with substances which act deliteriously upon this organ. One of these substances which possesses this property to a marked degree is the Chinese varnish called Tsih.

Our attention was called to this subject by an article by Dr. Mathews in the September number of the *Journal*, in which he gave an account of a case that had come under his notice.

The poisoning from Tsih is very similar to *Rhus toxicodendron* which is produced by poison ivy or oak, growing in eastern Ohio and Western Pennsylvania. I have met with several cases both in the United States and China,

and have found as was mentioned a marked idiosyncrasy in many people, so much so that they must constantly avoid going near any freshly varnished article for some days.

So susceptible indeed are some people that they cannot pass on the windward side of a freshly varnished article, even at a great distance, without being poisoned. It occurs to me that I have noticed that thin skinned people of a blonde type are annoyed the most, while dark skinned people are almost entirely exempt.

This varnish is largely used and is produced in this province. Painters in this city daily work with it, sometimes their hands are completely covered, but still cases of poisoning among them are very rare. Those who have had a previous attack can always tell when they are going to have another by a peculiar sensation of the skin. It has many symptoms in common with both erysipelas and eczema but is readily diagnosed after once a case is seen. In eczema we do not have the constitutional disturbances such as high fever and severe headache, while in erysipelas there is the absence of the itching which we have in the Tsih poisoning. I have seen about ten cases both native and foreign, and in all I found the same symptoms, and treatment equally efficacious in each case. It is always ushered in by a severe headache, rise of temperature intense itching and burning of the infected parts accompanied generally with constipation and loss of appetite. Within a few hours after the ushering in of symptoms the poisoned parts will become inflamed and commence to swell.

If the face, within a few hours it will be swollen out of all resemblance and intense itching set in. Different parts of the body may become infected by the patient scratching them with his poisoned hands. Treatment—*All cases* may be aborted with local treatment if taken in time, when the itching is first noticed. A ten per cent solution of carbolic acid frequently applied at this time will abort an ordinary attack in six hours.

All that is required constitutionally is a saline cathartic and something to control the fever and headache.

We have also found a strong solution of acetate of lead very efficacious.

Symmetrical Fibromata.

Dr. DOUTHWAITE reports the following interesting case :—

Wang Yiu-tung, aged twenty-eight years, admitted 31st March, 1894, for removal of what appeared to be either cystic or fatty tumours in the upper eye-lids.

The appearance of the patient on admission is represented in the accompanying litho-photograph. Vision was unimpaired, but was unable to see unless he raised the eye-lids with his fingers.



On cutting down on the tumours, they were found to be fibromata, with thick layers of fat between them and the skin, and attached to the roofs of the orbits, each in exactly the same position.

The growths were dissected out and were found each to weigh just one ounce. There is nothing remarkable about this case, to warrant publication, beyond the symmetry of the tumours.

We are indebted to Dr. FAHMY for notes of the following interesting cases :—

Belladonna in Epilepsy.—After a lengthened trial of Bromide of Potassium alone and in combination with other drugs, I have found in Belladonna and Bromide of Potassium much satisfaction to myself and almost complete immunity from attacks by the patients. My attention was particularly drawn to the value of Belladonna in Epilepsy by the observations of Dr. Black in the *British Medical Journal* of January 6th. Of course the use of Belladonna in this disorder is no new thing, but the combination of this drug with Bromide of Potassium seems to me to be more effective than either of the two drugs when given singly.

Whatever views may be held regarding the pathology of the disease, the clinical fact—viz. that “during a paroxysm the brain is successively anæmic and congested” (Bristone)—sufficiently explains the therapeutic action of Belladonna, which is stated, by certain eminent authorities, to possess the power of constricting the cerebral blood vessels.

But the cerebral disturbance is held to be due to a “functional disturbance at the source of the vasomotor nerves which are distributed to the cerebral vessels.” Now the Bromide is known to be a sedative to the nervous system. It diminishes the excitability of the cortical motor centres. Hence the value of the combination of the two drugs.

The following few cases of Hautmal illustrate the value of this combination :—

(1) Patient, male, age 37. Fits began in childhood, attacks very violent and almost daily in frequency. Mental condition much lowered. Wife ran away and forsook him on account of his lamentable condition. Has been under treatment since the early part of 1893. Bromide of Potash in increasingly large doses was given regularly, but only to somewhat lessen the number of the fits. Brown-Sequard's plan of combining the Bromides with Iodide of Potassium and Bicarbonate of Potash was followed for a time. The result was a little more satisfactory than when the Bromide alone was given, but the patient was not free from fits. (Arsenic and Quinine were also given as a tonic).

Patient was as regular as a clock in his attendance at the dispensary.

In the latter part of February of this year, the following mixture was tried: R. Tr. Belladonn. dr. ii; Potass. Bromidi dr. iv; aq. ad oz. vi—of this $\frac{1}{2}$ oz. ter in die. (occasionally Fowler's Solution was combined with this).

No fits of any kind.

Patient now for the first time absented himself for two weeks, notwithstanding that his supply of medicine was for four days only. At the end of this period he again returned to renew his medicine, and to report that he had been free from fits. Again he absented himself for about three weeks when he returned with a similar report. Having got another four days' supply of medicine, he was not again seen before three weeks had passed. This time he said he had had only one attack, which induced him to renew his medicine. He again returned in a fortnight and stated that he was quite well, and asked if he needed any more medicine. He was told to come back in a week, which he did. His report was freedom from attacks. Since the 1st of May he has been completely lost sight of. It is probable that he thinks himself cured.

(2) Male, age 22. Has been under treatment for severe form of Hæmatal since September 1893. Fits frequent. The same line of treatment was adopted as in case (1), with but small encouragement. But since the employment of the Belladonna and Bromide mixture, in February of this year, there has been very marked improvement—almost complete immunity from attacks, for, during nearly two months of treatment, patient had only four fits, while previously he used to have one or two fits every two days. He has not been at the dispensary since the latter part of March.

(3) A lad of 16, has suffered from Epilepsy since he was four years of age. Markedly stupid. Fits getting worse, but only two or three in the month. Came under treatment in the latter part of March. The B. and B. mixture was ordered, and with pleasing effect, for since this treatment was commenced up to the present (May 13) he has had no recurrence of fits.

I intend giving this combination of Belladonna and Bromide a more extensive trial, however, before I appear too sanguine about results.

There is, however, another class of cases where good has been obtained from the Bromide and iron alone. I know that some condemn the use of iron in Epilepsy as harmful, but the following case has been benefited by such treatment:—

Patient 17 years of age, suffering from malarial anæmia and prolapsus recti in addition to Epilepsy. The following, in addition to other lines of treatment, was ordered: R. Fer. Sulph. grs. xxx; Acid Sulphuric Dil. mxxiv; Quin Sulph. grs. xii; aq. ad oz. vi—of this $\frac{1}{2}$ oz. ter in die.

This treatment was commenced in November, 1893, and continued more or less regularly till March 1894, with perfect success, for patient had no recurrence of attacks. Improvement in other respects was also noticeable.

Cash in nostril.—One has sometimes met with beads, peas, and the like in the nostrils of children, but I have never before had a case where cash was the offending foreign body. Patient, a juggler by trade, presented himself for extraction of four cash which he had introduced into his nares. Attempts, on his part as well as on the part of others, to remove the foreign bodies was not only unavailing but made matters worse by pushing the cash further back.

As it was impossible to remove the cash by the way they were introduced, and as they were felt far back in the posterior nares, I attempted to remove them by that exit by means of the index finger while at the same time pushing them along by means of a dressing forceps introduced through the anterior nares. Had I a curved forceps by me it might perhaps have been less troublesome to effect my object although with less certainty, for the finger could not only act as a hook but also as a feeler. It would also act as a guide for the foreign body along the dorsum of the tongue. As it happened, however, as soon as the body reached the back of the tongue the patient coughed and vomited, bringing out the four cash in the vomit.

This case illustrates the capacity of the Chinese nose, and the use it is sometimes put to.

Impacted calculus in penile urethra.—Patient a lad of 17, complaining of inability to pass water freely, as the stream sometimes suddenly stopped, also of pain at the urethral orifice. Duration about one month. On sounding, a hard calculus in prostatic urethra was diagnosed. This was, however, easily dislodged and pushed into the bladder. As relief followed this procedure, operation was declined by the patient's friends. Five days after this date patient returned wishing for operation. The calculus was found free in the bladder. During the night, while he was in the hospital, great desire to micturate with inability to do so induced my assistant to introduce a soft rubber catheter to relieve him. Urine flowed freely, but on withdrawing the instrument (No. 8), it was found impossible to do so after it had reached the penile urethra. Pain was excruciating. In this condition I found the patient in the morning, with temp. 102°.2. As it was impossible to withdraw the catheter so as to introduce the urethral forceps and remove the calculus, which was distinctly felt in mid penis, I at once cut down on the stone and removed it per urethral wound. It was found lying in the urethra with its long axis transversely—apparently was twisted round the catheter on the assistant's withdrawing it forcibly. On measurement, the calculus, which was partly uric acid and partly phosphatic, was $\frac{3}{4}$ in. long and $\frac{1}{2}$ in. at its widest part, and $\frac{1}{8}$ in. thick. After operation, a soft catheter No. 8 was tied in the bladder for 48 hours, when it was removed as it was causing some irritation. The wound healed very nicely, and patient was discharged cured. No other calculus could be felt in bladder.

Ruptured (membranous) urethra.—Patient aged 39. Four days before admission patient fell astride a boat while going into it with the result that blood was passed per urethra, and the scrotum became swollen and dark coloured. From that date he had not been able to micturate. On examination it was found that blood had extravasated into the cellular tissue of the scrotum and of the suprapubic and perineal regions. The scrotum was very dark coloured, swollen, and sloughing in a limited area of its lower aspect. No catheter of any kind could be passed into the bladder, and on withdrawing the instrument a small quantity of blood followed. Bladder greatly distended.

The bladder was at once aspirated above the pubes, and a large quantity of clear urine drawn.

Pending the consent of his friends to operative interference, the operation had to be postponed for two days, on each of which aspiration was performed. (This point is worth noticing, as it shows the remarkable tolerance of the bladder to repeated aspiration without any ill effects whatever. Up to this stage aspiration was done three times, and, as will be seen hereafter, it was repeated an equal number of times after the operation).

At the end of this period the consent of the patient and his friends to an operation was obtained, and accordingly he was anæsthetised and placed in the lithotomy position. A silver catheter (No. 8 English scale) was then introduced as far as it could go, and on its point a mesial free incision in the perineum was made. Bleeding having been stopped, an attempt was made to pass the catheter into the bladder through the proximal portion of the torn urethra; but the attempt failed completely. Nor was it possible to pass a director through the wound. Patient was, therefore, put to bed, and later on the bladder was again aspirated.

The passing of a catheter, after the operation is done, through the proximal portion of the injured urethra, is said by Erichsen, among others, to be "often extremely difficult." And it was found to be so in this case. Under such circumstances, when no relief has been afforded by the perineal incision, the plan advised by eminent surgeons is that the bladder "should be tapped through the rectum." I confess, however, to having a great dislike to tapping per rectum, and hence my adopting the suprapubic method.

Daily aspiration of the bladder and attempts to pass in the catheter through the ruptured urethra were continued for three days. On the third day the instrument suddenly slipped into the bladder; and was at once tied in.

After 48 hours it was found necessary to remove the catheter, as it was causing great irritation and some rise of temperature. In its place a soft rubber catheter of the same size (No. 8 English scale) was tied in. This in its turn had to be removed in 72 hours as there was evidence of commencing

cystitis. From that date patient was able to pass water freely—the stream being large and unchecked. He was kept under observation for about two weeks longer and then discharged. It is now nearly two months since he went home, and no stricture has supervened to induce him to return for advice. Before leaving the hospital the possibility of such an after effect, was plainly put before him, and he promised to return as soon as any trouble appeared. As he lives but a few miles from here, I conclude that all is going well with him. It is stated in books that a stricture is almost inevitable. I shall, therefore, watch the case with deep interest.

Fæcal tumour of right inguinal region.—Patient male, 45 years of age, complained of a slightly painful swelling in the right iliac region just above Paupart's ligament. There was a history of more or less constipation—only a small motion every three or four days. Condition had lasted ten days.

The tumour was found to be hard, ovoid and lying parallel to Paupart's ligament; non-pittable on pressure—or only very slightly. No tympanitis or fever. Tongue clean.

Enema of castor oil and soft soap was ordered. This soon produced a copious motion, but the swelling remained unaffected. On the following morning a tablespoonful of castor oil was given; and the following mixture was ordered: R. Ti. Belladonn. mx; aq. Ment. Piper oz. $\frac{1}{2}$ to be taken thrice daily. After three days of such treatment the patient returned with no evidence of the tumour: it was gone. A month later he was again at the dispensary and there was no recurrence of the old trouble.



THE SELF-SUPPORTING SYSTEM IN MEDICAL WORK.

BY H. T. WHITNEY, M.D., *Pagoda Anchorage, Foochow.*

My attention has been called anew to this subject by receiving, recently, a Report of the successful carrying out of this system in the Fatshan Wesleyan Medical Missionary work in the Canton province.

It is refreshing to read the last two Reports of their successful medical work on this basis, and it may be timely to talk the matter up a little just now, the financial depression at home making it difficult to obtain what we need for our regular medical work.

The free distribution of books and medicines at the beginning of mission work in China seemed to be a necessity, and it did a great deal of good, but it was not entirely free from harm, and it established a precedent which in many places it would be very difficult to change without endangering, for a time at least, if not destroying altogether, well established medical work.

It was considered a great privilege, at the time of the opening of treaty ports in China, to go in at every open door and distribute, freely, the literature of Western nations, and treat, without charge and irrespective of wealth, all the patients that might choose to apply.

It of course had its measure of influence for good, but its effect was to give a present good impression rather than be a permanent benefit to the people. It looked more to immediate results than to the general good of the nation. The motive that prompted such action was good, but the effect at the time and since has been in many instances not altogether the best.

The time and money that have been expended on books, drugs, dispensaries and hospitals, if it had been done with more discrimination and with the idea that what was worth having was worth paying, at least a nominal price for, especially by those who were able to pay, while it would have been slower in gaining a foothold, yet it would doubtless have paved the way for a more successful and appreciated work, and it would have obviated the necessity of changing, with great difficulty, what history has ever shown to be a demoralizing precedent.

It is true there were many difficulties encountered in gaining an entrance into China and opening up new work, yet, it is evident, greater discretion might have been used in many cases and prevented to a greater extent giving the impression to the Chinese that foreigners were wealthy and were only waiting for an opportunity to bestow it freely upon them.

It is true, also, to a certain extent, what some maintain, that at first it was necessary to give, as the people were not acquainted with our books or medicines and it was the only way they could be made familiar with them and led to appreciate them.

But still that did not justify its continuance, nor is it any reason why we should adopt the same plan in so much of our work at present. It is generally true in life that what costs nothing is very little appreciated, and it is as true in medical work as in any other.

Of course those who are really needy and have no money should receive treatment and even other help in connection with it if necessary. But, for the good of the individual, everyone should be required to make some return for the good received and there are but comparatively few, even in China, who could not give at least one cent for ordinary clinical treatment and more for hospital and bedside treatment.

They have to pay a reasonable fee to a native doctor, and it is an injustice to them for foreigners to do such an extensive gratuitous work, and trouble and disaffection have arisen, in various parts of China, among native doctors, because such work interfered with their legitimate living. It is true that the surgical and extreme poverty cases do not interfere much with the native

practice, but a large number do come to us and receive treatment without pay who would otherwise have to go to a native doctor and pay a reasonable fee.

To this some perhaps would reply that the native doctors are all quacks and ought not to be supported, but that is a matter hardly within our province to settle, or interfere with, except by enlightening the people.

There is an inherent feeling in every reasonable mind that all valuable possessions should be compensated for, though the inconsistency of man shows itself in regard to material things in that they are willing to take freely all they can get, even things they do not appreciate from not knowing their true value.

In regard to spiritual things, however, and the offer of a free salvation, men naturally reject them from a feeling that they ought to do something first to merit such gifts.

When people have been accustomed to receive things gratis, especially from those whom they regard as much wealthier than themselves, they gradually come to regard it as a duty on the part of the giver, and instead of being willing to give anything in return they almost demand the gratuity.

But this system works evil in other ways. It hinders the patient from knowing the real value of the medicine, treatment and service which he receives, from the very fact that they have cost him nothing. When a physician renders a service to a Chinese patient that he would receive \$20.00 for at home, what conception or appreciation can the patient have of the real value of what has been done for him?

Medical workers in China do, every year, thousands of dollars worth of most valuable service for which they receive only the merest pittance in return. This is a great wrong to both parties.

Again, it is demoralizing in that it destroys one's self-respect to receive great favors and render nothing in return.

It is equally true in spiritual things.

The native Church that has everything done for it by the mission tends toward an inactive, inefficient and non-appreciative condition, and it is much harder to start toward self-support with such a Church than if it had never had anything done for it.

The error underlying this gratis system is pretty generally admitted now by those in the mission field. But there are still some who would continue to give away everything. There are some who argue that tracts and particularly the Scriptures ought never to be sold. There are those who think that Christian wealth ought to supply medicines, dispensaries, hospitals and asylums, and give bedside treatment all free of charge, unless perhaps a few of the more wealthy might be expected to help a little if they were willing.

The medical missionary work has made great headway since its commencement in China, and exceedingly small returns, even compared to the standard of ability of the patients to pay, have been realized for the large and expensive services rendered, and it will require a strong determination, steady influence and united and persistent effort to produce the needed change.

It seems a greater undertaking than the development of self-support in the native Churches, for there we have the truth and a professedly Christian people with slightly awakened consciences to deal with. But the medical work has mostly to do with a class largely devoid of conscience, covetous and selfish, and this gratis system of over fifty years' continuance.

What, now, can the medical missionaries of China do toward bringing about a more natural and just basis of procedure that shall look to the good of this people as a whole?

The first step necessary is, of course, to get clearly before our minds what we ought to do, and then, secondly, consider the best means of accomplishing it. The means would naturally vary somewhat in different places according to the varying circumstances. As to the object to be attained I suppose there are but very few but what would claim that medical missions ought to be self-supporting, if possible. But with the present outlook this would be next to impossible except perhaps in two or three very exceptional cases, as the Fatshan work referred to above which seems to be very favorably conditioned for developing self-support and comes the nearest to entire self-support of any work I know of in China.

There are several medical centres that perhaps might be made self-supporting if their work should be reduced to correspond with their income from fees, drug sales, in-patients and dispensary receipts, the salary of the foreign physician and the original cost of buildings being excepted.

But if they were to stop with that it would be nearly equivalent to giving up such medical works altogether, as almost no missionary society would be willing to pay the salary of a physician and furnish the cost of buildings to do only what he would be able to do from such a small native income. Hence it is that efforts are made to secure appropriations from the home society, and subscriptions from Chinese officials, foreign communities, Chinese tea merchants and compradores and other Chinese of means, to enable them to carry on a medical work commensurate with the outlay of the society in furnishing a physician, hospital, dispensary, drugs, instruments, etc. to start such a work.

Probably no one would wish to diminish the amount of medical work done or the amount contributed and appropriated for such work, hence it would practically reduce itself to the position that owing to the great expense

of running a large medical work and the difficulty of realizing any considerable amount from the natives, owing to their poverty and the great disparity between the standards of native and foreign fees, it would not be best to attempt self-support only in reference to native assistants and the general running expenses of a dispensary or hospital, leaving out entirely the foreign physician's salary and the cost of land and buildings.

In most places this is, probably, all that could be hoped for a long time to come, while in a few exceptional cases a nearer approach to self-support could be secured.

It is probable, therefore, that this is the only practicable end to be attempted in China at present, as, in a majority of cases, only the native and general expenses could be met by such an income and all the vast work of medical missions, from foreign sources of income, would have to cease.

But there are many difficulties besetting the accomplishment of even the moderate standard suggested above.

In some places the extreme poverty of the people prevents, in others no official contributions can be obtained, in others there are none of the well-to-do Chinese who are willing to contribute, in others there are no subscriptions from native compradores to help out.

Again, in places where there are several medical works that have given practically free treatment to hospital and dispensary patients for years, it would be next to impossible to make any headway in self-support without a united and uniform basis of charging, as the natives keep pretty well posted on the different medical works and naturally go to the one offering the best advantages.

In the new fields it is much easier to start by charging small amounts, though these must be quite small or patients will not come. In this region (Foochow) from ten to thirty cash, or from one to three cents, seems to be about as high as the people are willing to pay for medicines at the dispensaries, while the more extensive hospital treatment is practically free.

Charity, properly administered, is beneficial both to the giver and receiver, but promiscuous non-discriminating charity, though it may render satisfaction to the conscience of the giver, tends to demoralize the receiver as well as establish a bad precedent.

The medical work in China has never had any special concerted aim except to get all the money possible, from foreign and native sources, and treat as many patients as it was possible to reach, hoping that in some way it would help advance the cause of Christ.

And as a result millions of Chinese have been treated, tens of thousands of lives have been saved, an untold amount of suffering has been alleviated,

and hundreds, at least, by this means have been led to Christ. These are results to be greatly rejoiced over and the work should be continued and extended as fast as it can wisely be done. But still it has seemed to me, for a long time, that, in connection with this great work, something more definite should be attempted along the line of self-support, and, while I have no special scheme to offer, I think it is our duty, both as medical missionaries and as an association, to present our views and offer suggestions with the hope that one part of China may learn from another to the end that wise means may be used to bring the Chinese to a better knowledge and appreciation of what is being done for them. This would also prepare the way for well-trained native doctors to go out and practice Western medicine among their own people.

After seventeen years of work and experience among the Chinese in and about Foochow and the Shao-wu region in the N. W. part of this (Fookien) province, I am convinced that the following basis of procedure should be adopted, as fast as practicable, by all the medical missions of China:—

1. All the old and new medical works should be put upon a charging basis, making all cases of worthy charity appear as exceptions, this being a matter of justice to the medical missions, and for the best good of the Chinese people.

2. All charges should be regulated with reference to the circumstances of each place to secure more from those able to pay and excluding none really needy but unable to pay.

3. All medical works in any one place should make uniform charges for the same medicines and the same amount and kind of treatment.



MEDICAL NOTES FOR NON-MEDICAL READERS.

No. 7. Cholera. (Second Paper).

BY SYDNEY R. HODGE, *M.R.C.S., L.R.C.P.*

We now come to a description of the symptoms and treatment of cholera. And here I should strongly dissuade my lay readers from endeavouring to draw any distinction between *choleraic diarrhœa* and *cholera*. The distinction, if it exist, is difficult enough for medical men to make, but impossible for laymen. *All cases resembling cholera are most safely treated on the supposition that they are cholera.*

It will be convenient to divide an attack of cholera into the four stages of: I. Malaise, II. Diarrhœa, III. Collapse, IV. Reaction, and to consider the

symptoms and treatment of each stage together. In this way all that is necessary to be known about any particular stage of the disease may be seen at a glance.

I. *The Stage of Malaise*.—A feeling of out-of-sorts should always be looked upon as a sign of danger during an epidemic of cholera, and although at least one high authority denies that there is any connexion between such feelings and a subsequent attack of cholera, yet common sense tells us that anything diminishing the resisting powers of our bodies makes us more likely to fall a victim to disease. Such premonitory symptoms may be only a feeling of mental depression and bodily exhaustion, a little headache, giddiness, noises in the ears, abdominal uneasiness, indigestion, etc., etc.

The treatment for all this is very simple and along common sense lines. Without frightening yourself into a state of nervous excitement pay increased attention to the precautions mentioned in my previous paper. Promote digestion and tone up your system by quinine in two grain doses three times a day, and add a little ginger or capsicum or other aromatic to it. Put a cheerful courage on and direct your mind from thoughts of possible danger. *Avoid all purgatives especially Epsom Salts.*

II. *The Stage of Diarrhœa*.—This may commence gradually like an ordinary mild attack of diarrhœa and get worse suddenly, or it may set in from the very first with great violence. In the former case the serious symptoms frequently develop in the early hours of the morning, the patient being woke up from sleep by a violent attack of diarrhœa. Now the great danger of this premonitory diarrhœa is that it is often so slight, so painless, and apparently so trivial that the patient takes no heed of it. Remember then that, *during an epidemic of cholera the occurrence of painless diarrhœa, however trivial, demands instant treatment.* “The evacuations, at first natural, gradually become more and more liquid, light-coloured, copious, and often frothy, *painless*, and passed with a feeling of relief. They then become watery and colourless, with lightish flocculi like congee water, and they are *ejected forcibly* with burning pain in the epigastrium, cramps in the extremities, and, frequently, vomiting.” (Murray).

This is the ordinary course of the diarrhœa, but these symptoms are by no means invariable—the onset may be with pain and symptoms of dysentery, or the evacuations may be yellowish and bilious looking and contain fæcal matter, they may even be distinctly of a red hue without containing recognisable blood—all these forms may, later on, develop all the typical symptoms of the advanced stage of cholera. The great point for a layman is not to go in for refinements; don't get book symptoms on the brain and lose your life, or the life of another, whilst you are waiting for rice-water stools:—*Stop all diarrhœa at once.* Go to bed and take a small dose of castor oil (say a table-

spoonful, in brandy or peppermint) at once and try and induce perspiration by a few cups of hot tea and some hot water bottles round you. As soon as the castor oil has acted nicely, stop all further action at once by a dose of chlorodyne or by one of the following cholera Pills :—*

R. Opium	one part	} one pill to be taken after every second stool.
Black pepper	two parts	
Assafoetida	three parts	

Keep in bed until you have had a formed motion, or for twenty-four hours have had no evacuation, and use a bed-pan instead of the night-stool so as to interfere as little as possible with the warmth of the bed (Niemeyer). Dr. Harkin recommends 20 to 30 drops of dilute sulphuric acid in water, flavoured with some aromatic, every hour, with mustard poultices to the abdominal region and iced water, when available, *ad libitum*. This may be tried, and with success, by those who have not got the cholera pills, but I can speak with the greatest confidence of these latter, having used them with much success in the great cholera epidemic in Hankow some five years ago. "When the looseness has been checked for six or eight hours a favourable result may be anticipated. Relapse may be induced by improper food, or excess, or fatigue: but, in general, there is return to health. In some cases the motions continue light-coloured, occasionally nearly white and the urine is scanty. One of the cholera pills, followed in six hours by a tablespoonful of castor oil will be found useful. It should be given so that the purging is over before night: but should it show any tendency to persist one of the pills should be repeated at bed time. Small doses of quinine are very valuable in restoring the appetite, and guarding against a recurrence of the symptoms" (Murray).

Should these means not succeed in stopping the diarrhœa, then other symptoms are superadded. Severe vomiting now sets in, of matters similar to those passed by the bowel, and dreadful cramps in all the extremities, and the motions are more copious and passed with great force. The patient begins to feel very prostrate and restless and complains of great thirst—the urine will become scanty or may be altogether suppressed. "Although the body feels cold the patient complains of feeling hot and throws off the bed clothes in order that he may keep himself cool." The disease has now got a fair hold and treatment must be prompt and effective.

The patient must on no account get up, for fear of syncope, a bed-pan being used for the motions. For the sickness give ice or cold water in small quantities frequently, and to relieve the thirst give either lemonade (acidulated with tannic acid) or soda water as the patient prefers. Surround him with hot bottles (empty soda bottles filled with hot water, tightly corked, and pack-

* These can be kept in stock, made for you by a chemist, and are exceedingly valuable. They are known in India as "Waring's Pills."

ed around him in blankets being the simplest plan), or wrap his limbs in hot flannels; relieve the cramps by frictions with either ginger, or whiskey, or turpentine liniment—relay of workers will be needed to do this thoroughly. Hot poultices should be placed on the loins and abdomen, and changed as often as necessary. *The opium pills should be stopped at this stage.* Hot saline enemata are frequently of great service now, relieving the cramps and allaying the pains in the abdomen, and not unfrequently stop the purging and initiate recovery. You may inject the following enema with an ordinary Ingram's enema syringe:—

Common salt	half an ounce.
Bicarbonate of soda	„ a drachm.
Warm water (120° F)	1 pint.

and this may be repeated several times, according as it relieves the symptoms. Great success has lately attended the injection of tannic acid enemata into the large bowel. A special apparatus is generally used for it, but an ordinary long soft rubber syphon stomach pump will answer fairly well. Raise your patient's hips well on pillows, so as to help the gravitation of the water into the large bowel, and then pass your soft tube; as far as it will go, into the rectum. In doing this you must *on no account use any force*, and should you find on pouring in the mixture that it will not flow you may be pretty sure that the tube has doubled on itself inside the bowel, and needs withdrawing a little. Having passed your tube, and inserted a funnel into the other end, raise it well above the bed and gradually pour in some of the following mixture:—

Boiled water, warm about	1 pint and 15 ounces.
Tannic Acid	„ 100 grains.
Laudauum	„ 30 drops.
Powdered gum arabic	75 grains.

I should not advise you to inject more than a pint of this mixture, as the advisability of using a larger quantity can only be judged of by a physician, and for any one not of adult age I should recommend to use the saline enemata alone, and not use this tannic acid one at all. Should you use it and see improvement follow, it may be repeated once or twice, choosing a time immediately following an evacuation of the bowels.

Another measure which has been strongly advocated is the warm bath. "The temperature of the bath should be about 100° F. and the patient immersed in it up to the chin and kept there for 20 minutes. After removal from the bath the surface of the body should be very quickly dried and enveloped again in hot flannels and warm aromatic drinks (such as hot ginger and water) should be given. The bath may be repeated, as occasion requires, in two or more hours.

The effect of the warm bath, in arresting or allaying the vomiting and in quieting the general nervous system, as well as in restoring warmth to the cutaneous surface, arresting the cramps, stimulating the flagging circulation of the blood, and relieving the general prostration, is often marked to the eye of the observer; and it is usually so comforting to the patient that, although objected to at first, it is frequently called for after being once experienced." (Report on Cholera in Europe and India by E. O. Shakespeare, U. S. Commissioner). It is obvious, though, that such a treatment can only be carried out when there are several attendants at hand and should it be used the greatest care should be taken, in lifting the patient in and out of the bath, not to raise his head, for fear of inducing fatal syncope. Another method of treatment which is very simple and has been tried with very satisfactory results by Dr. Alexander Harkin is the following: Apply freely with a brush behind the *right* ear and in the neck, as far as the angle of the jaw, the ordinary blistering fluid of the British Pharmacopœia (Liquor Epispasticus). This treatment is thoroughly based upon the fact that the cholera bacillus is supposed to exercise its fatal power upon the sympathetic nervous system, and thus lead to paralysis of the great pneumogastric nerve which supplies the stomach and intestines. The blister is applied along the course of the right pneumogastric nerve in the neck (it being the right nerve which supplies the sound intestines) and speaking of English cholera Dr. Harkin writes: "No matter how violent the vomiting or purging I have never failed in stopping both by this application. A stimulating effect is produced at once, and with it all gastric disturbances cease." (*Lancet*, Aug. 16, 84, p. 271). The treatment is well worth trying, and though I have not had any opportunity of trying it yet, I certainly shall as soon as occasion arises. Absolute quiet should be maintained in the patient's room so as to promote sleep.

The third stage or stage of collapse now sets in if the previous remedies do not prove successful. "The pulse becomes feeble, the eyes congested and sunken, countenance livid and pinched, the breathing oppressed, breath and tongue cold, the voice a whisper—copious cold perspiration and finger shriveled as if long in hot water" (washerwomen's fingers) "and cramps ascend higher. The change in this stage is great but recovery is possible. If not, the last stage of collapse sets in, when the pulse becomes imperceptible and the patient nearly unconscious but may be roused." (Murray). Niemeyer gives the following graphic description: "The vomiting ceases, the serous discharges are interrupted, or the contents of the intestines dribble away unceasingly and involuntarily: The heart almost stops its pulsations: the thickened blood almost ceases to flow: respiration becomes extremely shallow, slow and irregular; aphonia is complete, as also is anuria (suppression of urine): the surface is cold as marble and livid, especially that of the orbit,

nose, lips, fingers and toes. Even the tongue and breath are cold. This stage may last for several hours, to end in death or reaction." As to treatment there is little more to be done than to persevere with the measures already mentioned. A strong mustard poultice should be tried over the loins and abdomen. Extract of fresh meat* may be given as a stimulant, about 2 oz. every 2 hours, or Liebig's extract or Brand's enema in teaspoonful doses, if the fresh meat cannot be obtained. *Alcohol in all forms should be avoided.* My own experience inclines me to agree with those who say it can do little good which meat extracts cannot do equally well; whilst it may lead to troublesome complications if after reaction should set in. I used it regularly in the Hankow epidemic, in the form of spirits of chloroform, but I had no very striking results from its employment.

IV. *The Stage of Reaction* may set in violently with mild delirium, or the patient may gradually pass into a typhoid state with low muttering delirium great pain and irritability of the stomach and bowels, dry brown tongue, sordes on lips, coma and death. The more favourable form of reaction sets in more gradually. The first favourable sign is the appearance of bile in the stools as shown by their change of colour—"the vomiting and purging gradually subside, the skin becomes warm, the pulse fuller, the urine is again voided and the patient falls into a refreshing sleep." It is important to remember that *a cholera patient is never safe until the flow of urine is freely re-established*; at the same time sometimes the secretion is re-established but the patient is too weak to void it, *therefore always examine for any swelling or hardness in the region of the bladder and pass a soft rubber catheter if you find any.* As to treatment in this stage "two grains of calomel with half a cholera pill two or three times a day" is recommended, especial stress being laid on the calomel. Absolute rest, poultices to abdomen till urine flows freely, plenty of fresh air, iced or cold cloths to the head for delirium, small quantities of milk diluted with soda water or barley water, or even peptonised if necessary, a starch and laudanum injection into rectum for pain and straining (see paper on dysentery) and small doses of quinine will be found the most useful.

During convalescence great care must be exercised, to avoid indiscretion in diet, overexertion etc., might induce a relapse.

Occasionally, in bad cases of cholera, ulcers form on the cornea leading to long continued ulceration and conjunctivitis. This will need medical attention, but should none be available, I should advise you to keep both eyes covered with a dry pad of absorbent cotton wool, or keep the patient in a dark room; wash out the eyes gently, several times a day, with a warm 2%

* Chop a pound of fresh beef steak very small indeed and just cover it with cold filtered water, let it stand two full hours and then strain it. A few drops of hydrochloric acid may be added to the meat when eating.

solution of boric acid and if you have a little dilute yellow oxide of mercury ointment, 4 grains to the ounce, put a little between the lids every day. Hector Fagge speaks of the occasional occurrence of a rash in cholera. "Sometimes there is slight pyrexia and a bright crimson or scarlet rash, mostly on the backs of the hands and forearms, though it may appear on the trunk. It seldom comes out till a week or ten days after the commencement of the attack." It is said to occur mostly in children and young persons that such cases are generally mild. Little children who have survived an attack of cholera not unfrequently pass into a curious condition which gives great anxiety to the mother; "they lie very frequently in a restless or an unconscious state, their eyes reddened, screaming or with an occasional piercing cry, grinding their teeth at intervals or even having convulsions, and with laboured breathing." (Niemeyer). This condition, which is most probably due to exhaustion, generally passes off after a time and is most suitably treated by the frequent administration of small quantities of beef juice.

VESICAL CALCULUS IN CANTON PROVINCE, CHINA, INCLUDING THE REPORT OF A PERSONAL EXPERIENCE IN
894 OPERATIONS.

By J. G. KERR, M.D., LL.D.

The province of Kwong-tung, of which Canton is the capital, is the most southern part of China and lies between 21° and 26° north latitude, and 109° and 118° east longitude, a part being in the torrid, but the greater part in the temperate zone. The city of Canton is a few miles south of the line between the two zones, and is on nearly the same latitude as Calcutta, Mecca, and Havana. The temperature in summer ranges from 85° to 90°, the maximum in ordinary years being placed at 96°, and the thermometer rarely shows 100° in the shade. In winter ice is occasionally formed, but the usual temperature is from 35° to 55. In the northern part of the province snow falls on the hills, but in the southern part frost and ice are never seen.

From October to January, both months included, the atmosphere is dry, and there is little rain. The rainy season is from February to June. Sometimes there is continuous rain for several weeks, but usually there are intervals of clear weather. The annual fall of rain is 70.625 inches. "The north-east monsoon commences in October, and is the prevailing wind till March, when the south-west monsoon sets in." During the rainy season the atmosphere is charged with moisture, which at times is excessive.

During the summer months the heat, as a rule, is continuous, with but little difference between night and day. Slight physical exertion brings on free perspiration, and the laboring classes discharge a large amount of fluid through the skin, the loss being supplied by the free use of tea.

Atmospheric vicissitudes are not frequent, but there are occasional sudden changes. Destructive typhoons visit the coast every year from June to October, always coming from the east, and are attended with a decided lowering of temperature, which extends beyond the limits of their extreme violence. Thunderstorms are of frequent occurrence during the summer months. Excessive rainfalls in some years cause overflow of large tracts of country, while drought occasionally leaves the population hard pressed for the necessities of life.

Malarial diseases prevail in the lowlands of the delta and in the river bottoms. Intermittent fever with its sequelæ is common; and epidemics of fever, small-pox, cholera and influenza occur. Intestinal diseases, pulmonary complaints, rheumatism, syphilis and scrofula have their share of victims.

There is no such thing as country life in farm-houses as it is seen in all parts of the United States. The necessity of mutual protection compels the agricultural population to live in towns and villages, in which the streets are narrow, the houses small and the surroundings such as are not sanitary.

Geological Formation.—The city of Canton is situated on the northern border of a great delta watered by the interlacing streams which unite the three principal rivers of the province, the largest flowing from the west, the other two from the north and east. To the eastward from Canton sandstone prevails, but beyond the great delta the west and north rivers flow through hills and mountains of limestone, and the water of the delta is more or less charged with lime.

Habits of the People.—The Chinese of this province differ but little as to cleanliness from those of other parts of the empire, but by reason of the warm climate they pass more of the time in the open air, their houses are more open, and they require less clothing. During the hot months, when perspiration is so free, bathing of some sort is necessary for comfort, and all classes have at least a sponge bath in the evening. In the cold weather the poorer classes wear the same garments for weeks without change. Those in better circumstances wear undergarments which admit of change and washing. Wadded jackets are used by all classes for warmth, and since fire is not used for heating houses, additional jackets are put on as the temperature falls. Furs and fur-lined garments are much used by the rich.

Food and Drink.—In Southern China rice is the chief article of food used by all classes. The masses of the people have, besides fresh and salt vegetables, small quantities of salt meat and fish. Fresh meat, fowl and pork

are luxuries for the poor. Dried meats, ham, pork and duck are much used by the rich. Salted and dried fish and salted duck's eggs, with pickled vegetables, are used in small quantities as a relish at almost every meal. The cheapness of rice enables all but the very poor to have good food. Pastry in the form of cakes, rich in fats, is in common use at restaurants. Some have pieces of fat pork in them. The Chinese use no food that is not well cooked. River and well waters are used for cooking purposes. Tea is the universal beverage, and has this advantage, that everybody drinks water that has been boiled. Alcoholic liquors are used by all classes, and feasts with excessive eating and drinking are frequent, but drunkenness is not common; nevertheless, the results of the use of liquors are often seen in the hospitals.

The prevalence of urinary calculus in the Canton province has attracted the attention of the profession for many years. The first operation for stone was performed by Dr. Peter Parker in 1844. At the meeting of the Medical Missionary Association in Shanghai in 1890, the Rev. J. C. Thomson, M.D., made the following statement: "At the Canton hospital there have been 1261 operations for stone in the bladder, which, with 58 at the Canton Kam-li-fau hospital and 97 at the Fatshan hospital (twelve miles distant), and 11 at Swatow, on the eastern boundary of the province, gives us a grand total of 1,427 operations for Kwong-tung province."

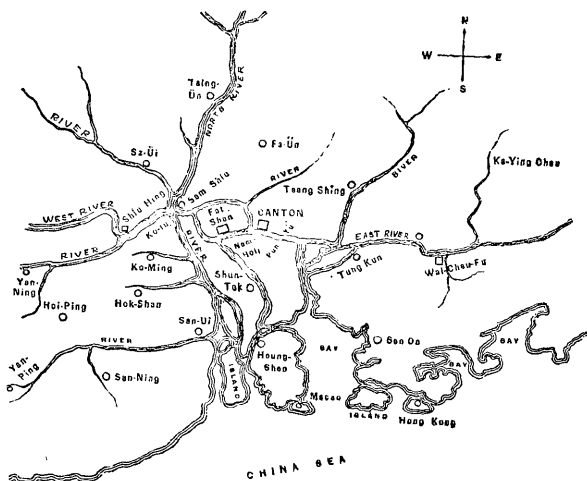
TABLE OF CASES OF URINARY CALCULUS

Showing the distribution by counties.

Pun-yü	215	Ko-ming	14
Nam-hoi	150	Tsung-fa	9
Tung-kun... ..	150	Tung-on	4
Fa-ün	86	Yan-ping	3
Tsang-shing	85	Wong-ning	1
San-üi	75	Yeung-tsun	1
Shun-tak	53	Kwong-ning	2
Heung-shan	47	San-hing	2
Ko-iu	47	Kwong-lung	1
Sz-üi	41	Lung-mun	1
Hoi-ping	33	Wai-chau-fu (Department)	28
Sam-shui	31	Ka-ying-chau	3
Tsing-ün	30	Kwai-chau	1
Hok-shan... ..	21	Tak-hing-chau	1
San-on	17	Lung-chau	1
San-ning	14	Lue-chau	1

About one-half of these cases came from places within one hundred miles of Canton, and very few are from a distance of more than two hundred miles. The province is divided into districts or counties, and the table (while not including all the cases) shows approximately the proportionate numbers from the counties which have supplied most of the cases to the Canton hospital. The boundary line between Nam-hoi and Pun-yü runs through the city of Canton, and these two counties, with Tung-kun on the east, give 515 cases. A glance at the map shows the

position in relation to Canton of county seats of the different counties. The distance from Canton to Hongkong is ninety-five miles, to Macao, ninety miles, to Tung-kun city about sixty miles, and to Shin-hing about seventy-five miles.



The vast preponderance of urinary calculus in the province of Kwong-tung over other parts of the empire is a remarkable fact. No adequate reason can be given why the people in one limited locality should be subject to urinary concretions in such numbers, and it is equally unaccountable that in other parts of the empire with such a vast population the cases should be so infrequent. Missionary hospitals have been established in Amoy, Foochow, Ningpo, and Shanghai for about fifty years, and in Peking and several of the northern ports, as well as Hankow, in Central China, for more than thirty years; and if the disease was of frequent occurrence it would have come under the observation of the able physicians and surgeons who have had charge of these institutions. The following table will show at one view the disproportionate frequency of the disease in Canton province and the other seventeen provinces:—

	North latitude.	East longitude.	Number of cases.	Remarks.
Canton Province	23° 7'	113° 14'	1427	Includes the 18 in Swatow in east part of Kwong-tung.
Coast Ports—				
Swatow	23°	117°	18	
Tai wan	24°	120°	2	Island of Formosa.
Amoy	24°	118°	5 or 6	
Foochow	26°	119°	22	In two hospitals.
Ningpo	29°	122°	0	
Shanghai	32°	121½°	6	In two hospitals.
Chefoo	37°	122°	2	
Tientsin	38°	117½°	8	
Peking	40°	117°	12	In two hospitals.
On Yang-tsz—				
Chinkiang	32°	119½°	0	
Nankin	32°	119°	4 or 9	
Kinkiang	30°	0	
Hankow	31°	114°	16	

This table, while incomplete, is sufficiently accurate to indicate that the region around the city of Canton is far more productive of calculous disease than any other part of the empire, and doubtless there is no territory of equal extent in any other part of the world which can claim so unenviable a notoriety.

In countries where a disease so painful as stone in the bladder prevails efforts have been made to afford relief, and operations have been devised for the extraction of the stones. In China, however, there is no authentic account of any attempt having ever been made to get rid of the stone. No surgical instruments of any kind have been devised, and of course none are found for such an operation, or for exploring the bladder, or for relieving retention of urine. We stand amazed at the fact that a people having so much mechanical skill, high literary culture, and giving so much attention to the cure of disease, should never in the many centuries of their history have made any attempt to devise instruments for the relief of diseases so terrible in suffering and so surely fatal as obstructions of the urinary organs. The methods resorted to in desperate cases are wholly useless, and it will scarcely be credited, but cases have been known to me where female members of the family have attempted to give relief by sucking the organ. In cases of difficult labor there is the same condition of ignorance and helplessness, and these examples show what a vast field for good is open to medical missionaries in the unenlightened nations of the earth, and what unspeakable benefits modern scientific and rational medicine enables them to confer on their fellow-men.

The first medical missionary to China was the Rev. Peter Parker, M.D., who opened a hospital in Canton in 1835. His work was interrupted by the war with England in 1840, but it was resumed in 1842, and his first lithotomy

was performed July 17, 1844. Altogether, he operated on thirty-two cases, the last being in February, 1852. The Medical Missionary Society was established in 1838 by resident merchants and missionaries, and Dr. Parker's hospital was carried on under its auspices.

Dr. Parker having received the appointment of United States Minister to China, the hospital was placed under my charge in 1855. Its work had been suspended for two years, and at the end of 1856 it was again suspended by the war with England and France. After the restoration of peace the hospital was re-opened, and its work has been continued without interruption to the present time.

During the time Dr. Parker was in charge of the institution the operations he performed for stone in the bladder, for cataract, and for the removal of large tumors excited extraordinary interest, both among foreigners resident in Canton and among natives of all classes. At that time very little was known in China of the outside world; and such operations, among a people who knew absolutely nothing of surgery, were regarded as little short of miraculous. The ability of the foreign surgeon to cure painful diseases, remove large tumors, and to restore sight to the blind, by methods which were entirely new to the native doctors, soon became known all over the country; and as the hostility to foreigners—arising from the war of 1856-57—began to subside, the number of cases applying for relief increased. In 1864, 11 operations for stone were performed; in 1874 there were 46; in 1882 the number rose to 70; and they have averaged more than 50 each year since. It is no unusual thing to have 25 and even 30 cases in the wards at one time. Every year some 20 or 30 cases are seen, which are either not in a condition for operation or they decline to submit to it.

The operations for urinary calculus in the Medical Missionary Society's Hospital have been performed by several surgeons, some of whom were temporarily associated with the hospital in the absence of the surgeon in charge. Beginning in 1844, Dr. Peter Parker performed 32 operations. After he retired Dr. Walter Dickson, resident physician of the foreign community in Canton, operated on 9 cases. During my absence in America in 1867 Dr. Wong Fun, a Chinese, educated in the United States and Scotland, and a graduate of the University of Edinburgh, operated on 17 cases, and after my return, on 16 others. During my absence in 1876-78, Dr. Carrow reported 122 operations, but his reports are not at hand, and the number is estimated, and they as well as Dr. Parker's are not included in the tabular statement. Again, during my absence on furlough in 1884-85, Rev. Joseph C. Thomson, M.D., performed 84 operations. Some of the operations on women were by Dr. M. Niles.

Since 1888 Dr. J. M. Swan has been associated with me as junior surgeon in the Medical Missionary Society's Hospital, and as near as I can

make out from the records, he has performed lithotomy 182 times. The remainder of the operations—894 in number, which include nearly all those by lithotrity and litholapaxy, have been by myself.

A tabular statement of the operations for calculus is given, arranging them according to age in decennial periods. The comparative number of cases met with at different periods of life and the comparative results of operations at different ages are thus shown, but so many different elements in each individual case combine to determine the final result that statistics based upon any one of these factors are to be received with much allowance. The statistics of any one year will show proportionate results differing from the total as here tabulated. In 1882-83 there were 68 consecutive cases of lithotomy which were successful. When fevers were unusually prevalent, or during epidemics of cholera or la grippe, the dangers attending operations were greater. In a climate where violent storms prevail every year we were careful to avoid all capital operations when the barometer was falling. Dangers not indicated were sometimes present, as in two cases where the introduction of the sound developed malignant urethral fever, which was fatal in a few days.

LITHOTOMY OPERATIONS

In the Medical Missionary Society's Hospital for the years 1855-90,
arranged according to age in decennial periods.

Age.	Operations.	Deaths.	
Under 10 years	193	12	1 in 16 nearly.
10 years and under 20	179	10	1 " 18 "
20 " " " 30	129	13	1 " 13 "
30 " " " 40	138	11	1 " 12½ "
40 " " " 50	75	5	1 " 15 "
50 " " " 60	50	12	1 " 4 + "
60 " " " 70	14	3	1 " 4½ "
70 " " " 80	1	1	1 " 1 "
	<hr/> 779	<hr/> 67	

LITHOTRITY AND LITHOLAPAXY OPERATIONS, 1855-92.

Age.	Operations.	Deaths.	
20 years and under 30	41	2	1 in 20
30 " " " 40	60	6	1 " 10
40 " " " 50	53	2	1 " 26 +
50 " " " 60	51	7	1 " 7 +
60 " " " 70	34	3	1 " 11 +
70 " " " 80	11	2	1 " 5½
84 " " " 90	1	1	1 " 1
	<hr/> 251	<hr/> 23	

The table of lithotomy operations for 1891-92 is given separately. During these two years the cases of calculus were under the care of Dr. J. M. Swan, the junior surgeon, and most of the operations for 1891, and all for 1892, were performed by him.

Age.	Operations.	Deaths.
Under 10 years	26	0
10 years and under 20	23	1
20 " " " 30	22	... Result of 1 doubtful.
30 " " " 40	14	1
40 " " " 50	16	1 Result of 2 doubtful.
50 " " " 60	8	0
60 " " " 70	4	0
70 " " " 80	1	0
	<hr/> 114	<hr/> 3

Two cases were operated on by litholapaxy, one of which was unfinished, and the other unsuccessful.

In 1889 Dr. Swan operated on 32 cases, and in 1890 on about 36 cases. These, with the 114 in the above table, make a total of 182 cases, and the operations were attended by remarkably successful results. Such a record in the first ten years of a young surgeon's practice is unusual.

Calculus in Women.—But few cases of stone in the female have been met with. The first was in 1874, but symptoms in other cases indicated its presence when examination was not permitted. Up to 1890, 10 cases in the female had been operated on, and in the three years, 1890-91-92, 5 more. Since Dr. Mary Niles has had charge of the female wards, patients are more ready to submit to examination and operation, and one or more cases are met with every year.

Calculi other than Vesical.—In a country so prolific of urinary calculi, it is not strange that these formations should be found in the urethra and other localities. The following table is a suitable appendix to those given above, and shows that the formation of calculi may occur in every place to which urine has access.

	Number of operations.	Number of calculi.
Calculi in urethra	167	167
" under prepuce (phimosis)	48	402
" in sac under urethra	1	291
" in scrotum (urinary fistula)	2	2
" in kidney (female)	1	1

The case with 291 calculi was peculiar. The patient was twenty-one years old, and a tumor had existed under the penis from childhood. When admitted it was the size of half a peach. The sac communicated by a small opening with the urethra. Four of the calculi were the size of pigeon-eggs and angular, six others were smaller and angular, while the rest varied in size from a pea to a millet-seed.

In one case of urethral calculus, operated on in 1875, the stone weighed two ounces. It was formed in a sac in the urethra, anterior to the membranous portion.

The lateral operation is the one which has been performed in the majority of cases, but the median has been adopted in a number where it was deemed suitable. As shown in the tables lithotripsy in early years, and later litholapaxy, have been used in over 250 cases.

When the stone is of moderate size, the patient young and in good health, no other cutting operation is likely to supersede the lateral. When the calculus is small, or of moderate size, and the bladder and kidneys in healthy condition, litholapaxy, in skilful hands, offers a preferable method. Large stones ought not now to be met with in civilized countries, but in China and many other countries surgeons must be prepared to deal with them. There is a difference of opinion as to the best method for their removal. The supra-pubic operation is preferred by some surgeons. It has had periods of popularity, again falling into neglect, but is now being revived with all the advantages of antiseptic methods. Whether it will hold its place remains to be seen.

In a practice larger than falls to the share of most surgeons, I have had to deal with large calculi, and, being far removed from instrument-makers, I have had to resort to methods and instruments not perfectly adapted to the uses for which they were employed, and not recognized by the authorities, but after having performed a hundred operations with, in most of them, only the assistance of Chinese students, I had a basis of experience which stood me in hand when difficulties were met with.

The experience and observation of surgeons who employed lithotripsy and litholapaxy had taught them that in certain cases the bladder would endure a considerable amount of handling. My own observation showed me that this was true in cases where the stone had attained a large size without producing severe vesical or kidney disease—in other words, the long-continued presence of the foreign body had produced tolerance.

Having met with large calculi, in the extraction of which difficulty was experienced, I was under the necessity of studying all the methods proposed for such cases. The bilateral and the supra-pubic operations had their advocates, and large forceps, with screw power in the handle, were recommended, but each had disadvantages. The desideratum seemed to me to be some safe method of reducing a large stone to fragments small enough to be extracted through an ordinary lateral incision. The use of strong, heavy forceps required a large incision, and if the stone was very large the male pelvis would not afford sufficient room. What was required by the conditions was to work from the centre of the stone; and for this purpose the use of a drill was indicated. I determined, after due consideration, to try this method. But practically my first efforts to do this resulted in using a chisel and mallet, which, although it may be regarded as rough surgery, accomplished

the object, and has, I think, been a step toward the adoption of a drilling process, not only less objectionable, but more effectual. Examples of the operation are here given.

The first case operated on with the chisel and mallet was on March 19, 1869. The stone was held with lithotomy forceps at the incision, and a carpenter's chisel was carefully fixed on it, one hand holding the forceps and the other the chisel. A few strokes were made with a mallet in the hands of an assistant. The chisel was also used as a drill in this case, and fragments broken off with a pair of sequestrum forceps, one blade of which was inserted in the hole made by the drill. The fragments weighed three ounces, and there was some loss of pulverized sediment washed away. The patient made a good recovery.

The second case was a man twenty-four years old, who had symptoms of stone from his boyhood. The stone was supposed to be large, but it proved to be only one and one-half ounces. It was oblong and lay transversely in the bladder, which was contracted on it so that it could not be turned to a position bringing the long diameter in a line with the axis of the outlet. The chisel and mallet were used and the stone broken into two fragments, which were then easily extracted. The case progressed favorably to complete recovery.

A third case was operated on August 16, 1869, in which the stone was very hard, and nearly two hours were occupied in removing it, the chief difficulty arising from its hardness and the contraction of the bladder on the last half of the stone, so that it could not be grasped with the forceps. During the first week fever and abdominal pain occurred, and an abscess formed in the perineum; but, notwithstanding the long-continued manipulation, he began to improve after the first week, and was discharged fully recovered on the 31st day. The weight of the fragments was four ounces and two drachms.

The largest calculus removed by this process was from a man forty years old, operated on November 17, 1870. It was a very hard stone; an hour and a half was occupied in breaking it up and in removing the fragments, which weighed seven and one-half ounces. The man made a good recovery, but had paralysis of the sphincter when he left the hospital, which passed away in time.

In the case of a man, aged forty-three, who had suffered for ten years, the stone was removed with the chisel and mallet. The patient made a good recovery. Weight of fragments, six ounces and one drachm.

A native of Nam-hoi, aged twenty-seven, was admitted August, 1888, for the relief of phimosis, for which circumcision was performed. Sounding revealed the presence of a large stone, which, after recovery from circumcision, and the usual preparatory treatment, was removed in the same manner

as in the previous cases. A carpenter's half-inch chisel, ground to a four-sided point, or drill-shape, was the instrument used.

In the case of another patient, aged sixty-seven, who had suffered for a year from severe paroxysms of cystitis, a calculus was removed, the fragments of which weighed two ounces and three drachms, and the bladder was syringed out twice a day with boric acid solution. In twenty-one days the urine was discharged *per urethram*.

It is not proposed that this operation with the chisel and mallet shall be accepted as the best method of reducing large calculi to fragments in the human bladder. For a number of years my mind has been directed to the dental engine as the instrument which could be adapted to the problem in hand, and on my return to America, last year, I found Dr. M. H. Cryer, of Philadelphia, engaged in perfecting a surgical engine which will have the requisite power, and which only needs suitable drills to enable the surgeon to work rapidly, gently, and safely. Safety is secured by directing the drill so that if it perforates the stone, it will strike one blade of the forceps, and thus the mucous membrane of the bladder will be protected.* After drilling one hole, the position of the stone may be shifted and another made; and this process continued until the calculus is honeycombed, and then reduced to fragments, which may be removed through an opening no larger than is required for a small or medium-sized stone, and involving no more danger to the patient.

Since the improvement made by Dr. Bigelow in the instruments for the removal of débris after the use of the lithotrite, I have improved litholapaxy in many cases, and I have watched with much interest the various improvements of Dr. Bigelow's apparatus suggested by other surgeons. There remains, however, one defect—the long distance to be traversed by the fragments before they are discharged into the receiver—which is not removed, or only partially, by any of the improvements which I have seen.

The desideratum here is to have the fragments fall into the receiver as soon as they pass beyond the arch of the pubis, and this is accomplished by using an evacuating tube bent at an angle in the middle. In 1886 or 1887 I sent to Messrs. Tiemann & Co. to make a tube for me which was bent at right angles; this I used for two years, but found the curve not quite the most suitable. In April, 1888, I ordered another tube curved to the shape shown in the figure. This instrument I have used for three years, and have found it quite satisfactory.

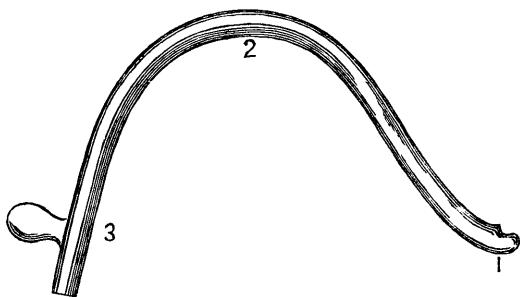
The simplicity of the improvement and the completeness of the adaptation to the object proposed are apparent on inspection of the tube, and especially

* Dr. Cryer assures me that a suitable drill may impinge the mucous membrane when in rapid motion, and not injure it.

on comparison with any of the other evacuating tubes in use. Surgeons seem to have forgotten that the penis is a flexible organ; otherwise they need not have spent so much time and ingenuity in making changes in instruments which amounted to but little as long as the straight tube was continued in use.

In using this curved evacuator the surgeon sits on a low stool and uses the rubber bulb to inject the bladder, as in any other instrument. The fragments fall through the bulb into the glass receiver below, and all complicated apparatus is dispensed with.

Hemorrhage is one of the dangers attending the operation of lithotomy, and in the large number of cases passing through our hands every year we have had now and then this complication to contend with. The method of plugging the wound prescribed by surgical authorities did not commend itself to my judgment. Many years ago I made use of a plug in the rectum, and found it quite effectual. Instead of stretching the wound it closes it, and there is no raw surface for it to adhere to when removing it. Tenesmus, if troublesome, which is not often the case, is relieved by an opiate. If the tampon in the rectum is not sufficient, as sometimes happens, the pressure of the tampon against the ramus of the pubis by two fingers of an assistant introduced into the rectum is all that is required. The tampon is retained in the rectum fifteen to eighteen or twenty hours. A square of cloth, well oiled, is partly pushed into the bowel, forming a pouch, and the folds of a roller bandage passed into the pouch until the tampon is large enough to produce the required amount of pressure on the wound. A silver female catheter is



placed in the wound, for drainage of urine. More convenient and more easily applied is the rubber bag, which is inflated after introduction, and may be found to be all that is required.

Calculus and Syphilis.—Syphilis is very prevalent in China, and many cases in all stages of the disease are treated in the Medical Missionary Society's Hospital, but it is very rare to meet with calculus in a syphilitic patient. So

few have been the cases that the question has arisen whether or not the two diseases were antagonistic. Calculus is not uncommon in men who have had gonorrhœa, since the stone is often lodged in the urethra behind a stricture, and the contraction of the canal is sometimes an obstacle to litholapaxy.

It may be an interesting question in pathology to investigate the influence of the syphilitic poison on the formation or the accretion of uric acid and its compounds; and this study may lead to far-reaching results on the subject of prophylaxis, which is now receiving so much attention.

PLAGUE IN CANTON.

By MARY NILES, M.D., *Canton.*

Case I.—Jan. 16th 1894 I was called to the Kwong Hip Ya-mun to see Gen. Wong's daughter-in-law, who was reported to be suffering from "a boil." Upon arrival I found that she had a very painful swelling in the inguinal region, and a temperature of 104.8, pulse 150, and a petechial eruption. A doubtful diagnosis of typhus fever was made. Jan. 17 the temperature was 102.5° and pulse 130, there was now a tendency to stupor, "boil" the same. January 18th 4 p.m. patient was reported to have been unconscious since early morning. She had just spoken, for the first time that day, after having taken several doses of bear's gall, she then became so very restless, that it was impossible to take her temperature. The pulse was very rapid, weak, but fever apparently absent. I noticed that she was attired in her grave clothes. January 19th, as no invitation came to visit her I concluded that she was dead. February 22nd I was called again to the Yamun on account of "the boil not yet being healed." On arriving I found my patient well in every respect excepting that there were several discharging sinuses.

Case II.—March 30th I was called to see a child in the girls' seminary of the Presbyterian Mission who was in a comatose condition. The pulse very rapid, and temperature 106°. The swelling in the inguinal region immediately reminded me of the General's daughter. Purpuric patches of varying extent appeared very rapidly on different parts of the body. In two hours a black vomit set in followed by death. Cases I and II were diagnosed as the same disease and precaution taken for disinfection as if for typhus. March 31st reports were brought to me of a very fatal disease in the city of which a number had died suddenly. As the child had but just returned from the infected quarter it was presumable that she had the same disease as the others. I reasoned that all the cases of typhus surely would not terminate so rapidly, and consequently concluded that it was plague not typhus with which I had been dealing.

Case III.—Came on a passage boat from a village several miles away. Mother said an epidemic was prevailing in their street. The child had been sick two days, and had convulsions, coma and fever when I saw her. She died in half an hour. Though no enlarged glands were found the disease was pronounced plague.

Case IV.—A woman living a few minutes walk from the hospital was seen in her home April 8th. Glands on both sides of the neck enlarged and patient said to have been ill five days with high fever. Pulse was found very rapid and thready. Patient died three days after.

Case V was seen April 15th. I found her assigned to one of the rooms in the hospital. There was no glandular enlargement, temperature was 106.4° , pulse 140. I advised getting a boat for patient, and in the interval she was isolated. April 16th her temperature was 101° and she said she felt very much better. Complained of pain in abdomen and had diarrhoea. April 17th temperature 105° and slight delirium, also purpuric spots. Patient died after an illness of 72 hours. Though she had complained of some pain in the groin no swelling was discovered.

Case VI was seen in the afternoon of April 21st. She said she had fallen down suddenly the evening before and had fever immediately after. The temperature was found to be 105.4° . Expression of countenance good and as if in health, while the mind was clear. There was a slight swelling in inguinal region. An infant was nursing at the breast. Directions were at once given for the removal of the infant. Temperature was 104.4° and gland more painful. April 23rd a.m. temperature 103° . Reported that she had felt much better the evening before, and had been free from fever: but, in the night fever had returned and the gland became excessively painful. No mental symptoms were apparent, though the attendant said she had wandered during the night. Three hours after I left the house, the patient died, death being preceded by purpuric spots which appeared all over the body. Nursing infant has continued well to this day.

A woman came to the hospital in a chair April 30th. She said she had been attacked with fever seven days before. Her temperature was 101° and she seemed much weakened. She had four carbuncles on her back. Her husband came with her and had walked the distance of two miles. He had a carbuncle over one shoulder blade. Neither of them gave history of enlarged glands; but only of severe fever. They said the epidemic had been in their street and two out of ten had recovered.

May 2nd a patient in the second day of the plague came in to the clinic. She had come from Hongkong by the night steamer. Glands in the neck somewhat swollen, temperature 105° . Expression of face the same as I have observed in a number of cases, being one of utter apathy. The

patient seems almost unconscious, but will walk about and do as directed. In some patients the facial expression has been perfectly natural, giving the doctor a feeling of security known to be false. The swelling in the neck enlarged to a frightful extent in a few hours, till the girl was becoming asphyxiated by the pressure. The expression then changed from stupor to wild anxiety. Patient died that night.

Several cases have arrived with the buboe in the axilla. One who came with the cervical glands affected was seen continuously for a number of days—an abscess formed and was lanced and the child was progressing well when last seen. I was told of a case in which the temperature rose to 107°. Antipyrin in 15-gr. doses was repeated five or six times. Phenacetine 10 grs. and quinine was also given, the temperature dropped to 104° for an hour and then speedily rose again. The patient was taken to his country home by steam launch, and I understand recovered.

Application was made to me to receive a very poor patient who was quite exhausted after an abortion. Being assured by a reliable person that it was not a case of plague, I consented to her coming. On examination no buboes were found. Temperature was 104° and pulse rapid and weak. There was a bulla on the calf of the leg. As I could not pronounce it plague she was received. The fever continued a number of days. After she had been twelve days in the hospital and was free from fever, temperature indeed subnormal and strength improved, a buboe was discovered in the inguinal region. This she said had been there three or four days. Inflammatory swellings appeared at this time in other portions of her body, and she was removed from the ward. At last accounts patient was nearly well.

Pregnant women have suffered much from the plague. I was called to one woman who was in the third day of plague and in the pangs of child birth. The child was still born and the mother died immediately after the birth. I attended a woman in abortion with a temperature of 103°. It was said to have been occasioned by weeping over the sudden death of her child with convulsions. Two puerperal cases had a temperature of 106° and over, which if not due to plague itself I thought might be attributed to sepsis from plague poison.

The wife of one of our former medical assistants was attacked with the disease. A boat was procured for her reception. She was two months pregnant. After an illness of ten days she aborted. She is now convalescing.

There have been a number of light cases. One lady came in a chair, but walked into the office. She looked perfectly well. Temperature, pulse and digestion normal. She said she had fever six days before and the following day when taking a bath suddenly discovered a swelling in the inguinal region, of which she had not previously been aware and which caused her no pain. I examined the buboe and saw for myself.

It has been noticeable to the people that the rats in infected houses have died. In the house where the child from the school was visiting when she took the disease thirteen dead rats were swept out one morning. In a house into which I went to see a plague patient eight dead rats had been taken out the day before and I accidentally stepped on a rat which squealed but did not run, and was soon dead. One of the officials from his private funds I am told, offered 10 cash for every dead rat brought to him. He had collected 35,252 in one month. 2,000 were brought in one day.

April 11th the officials issued a proclamation that the streets in the city should be cleaned and all rubbish thrown into the river and not sold.

Twenty coolies in government employ were to assist in this work. The attention of the people was also called to a former proclamation ordering the night soil to be taken away before ten o'clock in the morning and only in covered buckets and boats. The officials also went to the temple of the tutelary god, to pray for the people. They subscribed to the idol processions which were numerous. In one procession in the beginning of the epidemic, three children of one family from an infected locality, who were part of the pageant, were taken with the disease during their long march. One was taken down dead in the middle of the day, the second died in the evening, and the third the next day. At first the disease seemed confined to distinct localities but such methods had no power to keep it there and soon it was found in all parts of the city and suburbs. The disease is also in many districts in the province. Its origin is unknown but doubtless in some places it has had its source from Canton. Patients went home to the country in passage boats, some died in the boats and others in their native towns.

It is impossible to ascertain the loss of life from the disease. I sent to the Oi Yuk Tong (愛育堂) at the end of the third month to inquire how many coffins had been distributed by that society in the Chinese third month. They replied over 300, whereas their usual number in one month was from 20 to 30. Others told me that Oi Yuk Tong had posted upon their doors that they had distributed two thousand coffins; while a friend of one of the managers told a friend of mine that he was told in confidence that they had distributed 20,000. Fong Pin-sho 所便方 answered by note to my inquiry that there was a mortality of 296 of the epidemic on their grounds in the third month, whereas last year 108 died of the spring epidemic. One said 170 coffins had passed through one of the city gates in one day. Another reports over 1,000 coffins carried out of one of the city gates in forty days. Later we may be able to form some true estimate of the mortality.

"GRATUITOUS TREATMENT."

BY B. C. ATTERBURY, M.D.

The evils of gratuitous treatment are often dilated on by those who believe our missionary hospitals should be run on the "no pay, no cure" system. Some recent yearly Reports noticed in the Journal take advance ground on this subject. These writers seem to be of the opinion that any delay in the coming of the millennium is directly due to those of their brother practitioners who do not practice their methods of work.

That, however, there are two sides to this question is evident—since after years of trial there yet remain free dispensaries in our home lands, and in all missionary countries there are many doctors of experience who still believe in working along the old lines.

Where there is so much to be said in favor of making our patients pay for medicines and treatment received, I dislike to say anything against the plan. Partly for the sake of discussion, however, let me present four considerations which should have some weight in forming an opinion as to the desirability of the missionary doctor demanding a "*quid pro quo*." Before doing this it must be said that gratuitous treatment does not forbid receiving *voluntary* contributions from patients as these are to be encouraged. Neither does it imply giving expensive surgical appliances to all who need them. The principle of giving away even these may be the right one, but as Christ shews, when speaking of a man putting away his wife, even a right principle may have to be restricted when it comes to practice. As the resources of our hospitals are limited, all it is claimed should be done is the dispensing of ordinary medicines without demanding any return.

These then are the points which invite attention.

First. Charging for the treatment of the sick by those whose main object it is to preach Christianity is out of harmony with the spirit of the Bible. In that book no work for Christ is put on a business basis—all is voluntary. To be sure the laborer must have his hire and Churches must be supported. But compulsory giving as we see it in the Catholic Church and the stipulated payment for "sittings in the sanctuary"—the custom of Protestant denominations, are unscriptural. It is the *cheerful* giver who is praised, but no blessing goes with money given of constraint. Freely have we received of salvation and as freely must we give the same to others by preaching, teaching, or healing, as the Bible classes all these methods together. Instructing the children in the Sunday school is free, preaching in the chapel is not preceded by any enforced payment so also should healing the sick as a part

of missionary work be without price. Christ puts, "Thy sins are forgiven thee" with "rise up and walk."

Elijah refused pay from the heathen Naaman and Paul charged nothing for his power to cure.

This logic is not faultless as "circumstances alter cases." Still on Bible grounds in the main it can be claimed that the doctor alike with his clerical colleague can have the privilege of proclaiming a *free* salvation for body as well as soul.

Second. Charging for the treatment of the sick when the object is a religious or charitable one is contrary to native ideas as to how such work should be conducted. Hence it occasions remark and suspicion of mixed motives if one whose avowed purpose is to do good puts himself on the same plane with an ordinary practitioner.

The Emperor's bounties of food and clothes are never paid for, nor in any native benevolent work with which I am acquainted is any charge made. The Chinaman will say that to introduce the pay element into benevolence destroys all the merit of the work. The standard of the Christian doctor must not fall below the ideal formed in the mind of a heathen as to how relief for the afflicted should be extended.

Thirdly. Charging our patients a fee may neutralize much of the *influence* medical work is expected to exert.

The rich having paid only for medical services will not take kindly to any Christian instruction thrown in gratis with the medicine. In their view the foreigner by stipulating for money stands in the same relation to them as does any other doctor whose advice can be bought and they neither expect nor want him to criticize their practices and beliefs. But it is on the poor, that immense majority with whom we come the most in contact, that such a system may have the worse influence. As doctors are not omniscient, they may often dismiss without treatment worthy cases, because their protestations as to inability to pay are not believed. Thus injustice will be done and those inclined to be friendly prejudiced against us and our teachings. Better for nine guilty men to escape than for one innocent man to suffer is the rule of mercy in our Court of Law. Better that many able to pay be treated gratuitously than that one should be angered and turned away perhaps to die through a mistake in estimating his poverty. It must also be remembered that the Chinese mind is full of suspicions and even in cases treated free any delay in the cure will be attributed by the patient to his inability to pay, as does his more fortunate neighbor, and therefore he does not receive the same careful treatment. Certainly the same regulations applying to all alike without distinction of money or no money is less likely to give rise to any dissatisfaction.

The condition also of the class who seek aid in our dispensaries necessitates their being treated gratuitously unless we wish to keep them away. With most of them life is but a struggle for bare existence.

When well, they are willing to work and ask for no favors but when ill appreciate, often most gratefully, any sympathetic attention. That they cannot afford to spend money in times of sickness is shown by the Report of a hospital in the South where the pay system is practiced to the fullest extent. In two places in this Report it is stated that the present staff could attend to several times the number of those who actually apply for relief. In other words they have not enough to do. Can we afford to stand idle in the market place because "no man has hired us" when by fully throwing open our doors hundreds instead of tens might be reached?

In this connection also it should be noticed that the old adage, "As master so servant" has some force. May not the effect of their chief receiving monies for his services be bad on the native assistants.

There are often Christian young men who are expected to use their medical knowledge in the service of the Church. Having that "eye for business" which distinguishes all the Chinese they may the more readily be induced by example to use their professional skill merely as a means for self-aggrandizement. Thus many hopes of their future usefulness to the mission will be disappointed.

Lastly. It is unfortunate for the foreign doctor himself to feel that a considerable portion of the money to support his work must come from his patients. Although having the best intentions he will be anxious to have financial success. Thus unconsciously he will emphasize the temporal and minimize the spiritual. He bargains with his patients as if their cure was a matter of cost and medicines and not of prayer as well. This tendency is well illustrated in a case mentioned in a Report which lies before me. The doctor attending a confinement case agrees with the relatives of the woman already in labor that if a girl is born five dollars is to be added to the fee charged, but if a boy, the extra sum is to be ten dollars. This estimation of the value of one sex being half that of the other may be correct according to Chinese ideas, but if our friend should fall into the hands of some strong-minded women at home, his frankness would cost him a considerable portion of his crop of hair. Native doctors "go one point better." "They wait" till the child is partially born and then strike for higher pay.

By constantly talking of money is there not danger in time that the missionary physician may become hard hearted towards the poor and losing the character of a good shepherd to all the flock alike become an hireling whose services are more especially at the disposal of the rich?

These are some points in favor of the gratuitous treatment of the sick. It is acknowledged that there are strong arguments on the other side. But the missionary hospital is something more than a philanthropic institution. It is the means to an end, that of getting this people to know and love Christ by giving a practical exhibition of Christ's love for them. Hence the questions of "pauperizing the Chinese" and of "making medical work self-supporting" do not, at present at least, affect the main issue. Tolstoi in his "The Kingdom of God is within you" pleads for the universal application of Christ's teachings as to non-resistance. He believes that putting these teachings into every day practice will hasten the coming of "the Kingdom." Let us medical men also elevate another of the Master's commands to its proper place and freely give the "coat and the inner garment" to the one asking for it. We may often be deceived, may often lose opportunity to add to the income of our work but yet in the aggregate will accomplish more for Christ by working in the lines He himself has laid down. One hospital with which I am acquainted has received large sums from native sources. But these have been in the nature of voluntary gifts and not of fixed charges, the character of the doctor in charge being such as to command both the hearts and pockets of his patients.

This seems to be the true principle for conducting missionary medical work—gratuitous treatment but encouraging voluntary gifts. More than this seems contrary to our profession as Christian teachers and may curtail our influence.



COMBATING INSECT PESTS.

By H. H. ROBINSON, M.A., F.I.C., *Wuchang*.

To those of your readers who like myself live in a native house the following notes may be of interest. The aforementioned houses appear especially designed to meet the convenience of rats, mice and insect life; the plan of having boarding a few inches from the brick wall gives every opportunity for vermin to multiply in the vacant space behind it and affords an easy and secure route from one part of the house to another.

In the hot months when the heat is trying enough without the extra annoyance of insects I find a liberal use of mosquito netting a great comfort. The netting is nailed down with the help of strips of wood so as to be insect proof, and the door is made like a foreign door to close tightly, but the panels

of the door are replaced by mosquito net so that the air can circulate through the room. Any insects that effect an entrance are disposed of by means of the following weapon which I find very efficient. A spray diffuser can be bought at the pharmacist's for three or four dollars and loaded with ammunition prepared thus:—Get two wide-mouthed bottles, a glass or tin funnel and some filter or blotting paper. Fill one of the bottles with tobacco and cover it with the common kerosene oil used for lamps; allow it to soak for some days or a week, and then filter through the funnel and blotting paper into the second bottle, and the ammunition is ready for use. By means of the spray diffuser charged with this liquid, mosquitos, flies, and other insects are easily brought down and if they are well sprayed, the nicotine is rapidly fatal to them.

It is best when firing at a winged insect, not to aim straight at it at first as the wind from the diffuser drives it away, but first to point in another direction, until the spray issues, and then to bring it to bear on the mosquito.

I have tried insect powder in the oil and found it effectual but later found tobacco cheaper, easily procurable and better. If the oil is twice or thrice poured on fresh tobacco the insecticide will probably be still more rapid in its action.



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OFFICIAL NOTICE.

The following ladies and gentlemen have been duly elected members of the Society:—Lydia Jane Wyckoff, M.D.; Edgerton H. Hart, M.D.; Richard Smyth, B.A., M.B., B. Ch.

The following amendment to Dr. Coltman's motion has been moved by Dr. Douthwaite and seconded by Dr. Hodge:—

“That the question of affiliating the Medical Missionary Association with the Red Cross Society be left open for one year, to give time for further correspondence on the subject through the medium of our Journal.”

Dr. Mathews wishes it to be announced that he must decline to again become a candidate for re-election to the Editorship of the Journal.

Several members having voted for Dr. Gillison as Treasurer, the Secretary begs to remind gentlemen that Dr. Gillison resigned that post only recently and does not wish to again hold it. The Secretary also begs to state that several having done him the honour to elect him to two posts, one office is quite sufficient honour for one man, and that under no circumstances could he accept the Treasurership.

The Secretary also begs to inform members, that, so far, only about a dozen, out of our large membership, have taken the trouble to return their voting papers for the election of officers. He himself will certainly decline to hold any office in a society the members of which take so little interest in matters, and possibly other prospective officers will feel the same. All voting papers must be returned *not later* than August 1st, 1894.

SYDNEY R. HODGE, M.R.C.S., L.R.C.P.,

Hon. Sec.

“Notes on the Malarial Fevers met with on the River Niger (West Africa) by W. H. Crosse” is a useful little hand book on the general subject of West African fevers. It is not clear, from the preface, whether it is written for lay or medical readers, but we presume the latter, as several of

the powerful drugs mentioned, such as Pilocarpine, Antipyrine, Digitatis, etc., would scarcely be recommended to a layman. We were surprised to find no mention of enteric in the differential diagnosis of a malarial fever—does it not occur in West Africa? Out here it is undoubtedly the *crux* in the diagnosis of a difficult case. It is quite contrary to our own experience in China “that those who travel a good deal by water” speaking of inland rivers are more free from fever than those who do not, but there may be special reasons, in the situation of the various ports, etc., for this difference. African boils are stated to leave behind a staining of the skin which closely resembles the pigmentation of syphilis, and we have frequently noted the same thing in China. There are some useful notes on nutrient Enemata, and the cases recorded at the end will be of considerable service to young medical men serving their first term. If it be true, as stated, that the plasmodium malarie can be easily distinguished with a ½th objective this should be a valuable help in diagnosis. The more severe forms of fever here dealt with are seldom, if ever, as far as we know, seen in China. But we can heartily commend this little book to those for whom it was written.

S. R. H.



A TEXT BOOK OF OPHTHALMOLOGY.

BY DRs. W. F. NORRIS AND C. A. OLIVER.

Published by Messrs. Lea Bros. & Co. Philadelphia. Pp. 620. 5 colored plates and 357 woodcuts.

It is with peculiar pleasure that the writer undertakes the review of the above book for the pages of the *China Medical Missionary Journal*. Having had the privilege of sitting under the clinical teaching of the senior author, Dr. Norris, while pursuing his medical course at the University of Pennsylvania in 1882-3 and the still greater one of working for several months with the junior author, Dr. Oliver, in two of the eye dispensaries of Philadelphia during the winter of 1892-3, he has read the book with unusual interest, and during the past winter has taught and translated the major part of it to a class of medical students, with much profit to himself as well as to them.

The book is divided into two parts; the first, consisting of 280 pages is by Dr. Oliver and is made up of ten chapters, treating in great detail of the *Embryology, Anatomy, Physiology and Optics* of the eye, and in the last five chapters, of methods used in the examination of that organ, use of the ophthalmoscope, determination of errors of refraction and the correction of the same. For a beginner, or one who has not had an extended

experience in treating eye diseases and fitting glasses, these chapters, especially those referred to last, are simply invaluable.

The author, young, enthusiastic and in love with his profession, shows most plainly his wish to make his reader enter into the work with that same spirit of thoroughness, which, as the writer knows from personal experience, Dr. Oliver himself evinces. Sparing neither time nor pains he endeavors to make the different methods of procedure so plain that he who runs may read. It is delightful to read his clear explanations of the methods and principles made use of in fitting for glasses, after the meagre unsatisfying pages on the same subject in most text books on the eye. Even one who has never had any practical experience in correcting errors of refraction under a competent teacher, might, by careful attention to the methods detailed in these chapters by Dr. Oliver, become fairly proficient in the same. His advice, oft repeated, to be thorough and painstaking in all examinations and work on the eye, is just what we need in China where the temptation, in the rush of daily practice and in the multiplicity of diseases we have to treat, is so strong to become superficial in our work.

The second part, by Dr. Norris, consists of nineteen chapters treating of the various diseases of the eye, methods of treatment, and operations.

As a surgeon of long experience and ripe judgment he speaks with authority as to the treatment of the various eye troubles, and is in the main clear in his delineations of both symptoms and treatment. At times, however, one could wish for more perspicuity in his handling of certain subjects: for instance *Ulcer of the Cornea*, a disease requiring daily attention, is treated by the author, so far as its causes and symptomatology are concerned, in so rambling a manner as to make it almost impossible to translate it into intelligible Chinese. Yet taken as a whole the second part is as satisfactory as the first, and is really excellent.

The colored plates are all finely executed and the woodcuts abundant and fairly good, some of them being admirable, while the general style of the book as to typography, paper, binding, etc., is all one would expect from the well known firm that publishes the book.

As already intimated, a translation of the most practical portions of the book has been made into Chinese, and it is hoped may be published within a year, including reproductions of the more important illustrations⁹ from the original plates.

J. B. N.

Chi-nan-fu, March 10, 1894.

HOSPITAL REPORTS.

THE WUHU GENERAL HOSPITAL.

1891—1893.

The Rev. GEORGE A. STUART, *M.D.*, in charge.

We make the usual extracts from this report. Beginning with the wards Dr. STUART says: "The number of in-patients for the triennium was 1,205, or an average of over 400 per annum. Taking into consideration the fact that 1891 was the riot year, when the whole Yang-tse valley was convulsed and the common people were afraid to come about a foreign place, so large an attendance is very gratifying." And again taking into account the vile character of the Hunan publications, and their wide circulation in this district, it is a great wonder that any were willing to take our medicines, or submit to our operations.

For the same period, 1891, 92, 93 the statistics for the dispensary are as below:—

Out-patients	1,387	2,204	2,064
Return visits	903	2,104	1,961
Operations performed			172

not including extraction of teeth, opening of abscesses, etc.

"Ten cases of leprosy appeared, and were treated with chaulmoogra oil, and either chrysophanic, salicylic or ichthyol ointment. None remained long enough to prove the value of treatment."

It is interesting to note the warmth with which the subjects of opium eating and free dispensing are discussed in all the hospital reports. We shall quote freely from the above report.

"Our experience with the treatment of opium smokers has been anything but satisfactory. The use of opium seems to

deaden all of the mental and moral faculties, so that no dependence can be placed on the patient carrying out the line of treatment."

We have also used all of the methods of treatment of which we had knowledge, including immediate withdrawal of the drug and gradual diminution. We found that no "iron-clad" rule could be adopted in this regard. The treatment must be adapted to the condition and disposition of the patient. Opium-smoking has become such a universal vice in this part of China, that it seriously interferes with the receiving of patients for the treatment of other difficulties. Another vice that is becoming quite prevalent, and that more directly interferes with the proper treatment of disease, because it produces greater physical deterioration of the body, is the consumption of morphia, principally in the form of anti-opium pills and lozenges. And sad to say, many native Christians and a few foreign missionaries are—I wish I could say, *ignorantly*—engaged in the sale and distribution of this drug in the above mentioned forms.

We may say that we have noticed that there has been no increase in the patronage of the wealthy and official classes, nor indeed of the ordinary, well-to-do merchant class. We feel that this is, in a large measure, due to the pauperizing method of free dispensing, which we, following the lead of other missionary hospitals in China, have pursued. Free dispensing is as unjustifiable in China as in America or England. And further, it is suicidal to Western medicine, whether practiced by foreigners or natives. *True* charity lovingly supplies these needs which are beyond a man's ability to supply for himself. And in this

is the true meaning of the old adage, "God helps those who help themselves." There is no charity in using the funds of the missionary society in conferring gratuities upon those who are well able to pay for all they get, and such a course certainly fails in the object aimed at—that of securing the goodwill and consideration of the recipient. Help to the very poor always secures the commendation of all classes, but help to those who do not need it only leaves a doubt in the popular mind, either as to our object, or as to our judgment. People in Western lands accept free medical advice or treatment, who would feel very much offended if offered a gratuity in any other form. Yet the former is as much a gratuity, and is as uncalled for as the latter. But the medical profession has educated Western people to accept this gratuity without a blush. Shall we continue to propagate this error in China?

Evangelistic work in connection with the hospital has not been neglected. All of our students and helpers are Christians, and the duty of personally witnessing for the Master has been urged upon them. They have been very faithful in the discharge of this duty.

Some of the patients gave in their names as inquirers and probationers, and we have every reason to believe that many have, in large measure, forsaken idolatry and are trying to lead new lives. Certainly they can never be the same heathen they were before, and they will be able to do much good for Christianity by their testimony to its practical workings, and to the teaching they heard while in the hospital. In the future we would feel inclined to admit many more of these inquirers to baptism, thereby getting them to openly renounce idolatry and espouse Christianity. In this way we believe that many could be saved to Christ and the Church, who otherwise would go back in the face of opposition or persecution.

THE TUNG-KUN MEDICAL MISSIONARY HOSPITAL FOR 1893.

We are glad to be able to report that during the year 1893, both sides of the work of medical mission have been allowed to go on without any interruption. The total number of attendances in the out-patient room has been 14,639, showing an increase of 3,945 over last year's total, and giving an average of 106 patients on each of the 138 consultation days.

Rev. I. Genähr's Report.

One distinctive feature of mission work in China is the medical work, as seen in the hospital and dispensary, and it is rightly regarded as an invaluable assistant in pioneer work among the Chinese. It is not considered an indispensable requisite, but it is at any rate a very valuable evangelistic agency doing its share toward removing prejudices against foreigners, which seems to be ingrained in the Chinese mind, and helping the evangelistic efforts of the missionary.

Work goes on smoothly, and steadily, and it is to be hoped that our preaching and teaching are producing fruit. Two men and two women have been baptized in this city, all of them brought to the knowledge of the true God and Saviour by the agency of the hospital. Though the good seed sown has yielded only a small harvest in this year as to actual conversions, there is nevertheless some encouragement to be derived from the character of the converted who have an earnest, aggressive spirit to go on and proclaim the glad tidings making them ready also to suffer, and determined to persevere.

We are also encouraged by the knowledge, that there are besides the open converts not a few secret disciples. I speak from experience that among those who have been treated in the hospital are many who have undergone a wonderful change. A daily increasing number are in studious,

helpful contact with the Scriptures and Christian books.

It is true, there is a painful reluctance on their part to decisively assume and publicly avow discipleship.

These reluctant and undecided "secret disciples," as we have called them, ought to be visited in their homes regularly, the doors of usefulness opened by the hospital work ought to be entered vigorously. Our work has not been hindered in any way as in the past.

A noted doctor in Tung-kun sent his own wife, a small-footed lady, to have both eyes operated on for cataract. Another doctor speaks quite openly of the fact that his two granddaughters-in-law were under our treatment.

The report further states that of the 4,838 new patients, 101 were cases of leprosy. Of the 306 cases of intermittent fever 214 were of the quartan type. Experience with opium cases has a special interest in these days. The physician in charge thus speaks:

Of the many who applied for treatment of the opium habit, we admitted seven men and one woman in the early part of the year, but we have heard of such a large percentage of relapses that latterly we have ceased to take in such cases.

We remember with a sad heart the case of a business man, who for nineteen years had been a victim of the opium habit. He smoked three and a half mace a day, and knowing that he was ruining himself, since he was unfitted for work by it he came prepared to endure any suffering, if only we would free him from his pipe. He got well in about a month, gained thirteen pounds in weight, and returned to his home rejoicing. But alas, the Great Physician had not healed him, for ere very long under the influence of former friends he was as bad as ever.

The following cases are interesting from their unusual choice of site and number:—

We had to treat a man of forty-five years of age for *double carbuncle* in the lumber region. On admission, his face was pale,

complexion yellow, temperature 102.2 F. Over the thorax and shoulder were traces of two aborted carbuncles. The carbuncle on right side of spine measured 7 inches by 6; that on left, 4 by 4, was incised crucially, and healed rapidly. The larger one in thirty days was reduced by one half, and healed thereafter rapidly by granulation.

Two other cases of carbuncle in unusual positions were over the hypogastric region and over the upper arm.

MEDICAL WORK IN PEKING OF THE AMERICAN PRESBYTERIAN CHURCH. 1893.

We make the following extracts:—

The past year has been one of continuous hard work at the An-ting hospital and dispensary. The dispensary has been open every day throughout the year. The dispensary at the Hou-men, on Pipe Street, has been open every other day.

The country visiting has been regularly made upon the appointed days; eighteen trips to Chéng-chia-chuang and San-ho, occupying in the aggregate seventy-seven days. Dr. ATTERBURY returned in October after a year at home, and upon his arrival Dr. TAYLOR left to take charge of the opening of medical work in the new station of Pao-ting Fu. The An-ting dispensary has continued to be the principal work; the heavy attendance compelling one man to devote most of his time to it, so it has been the arrangement heretofore that the physician in charge of the hospital should also attend to that work, while the other physician had charge of the Pipe Street dispensary and the country work.

"Visits have been paid to patients at their homes to the number of 237." "One hundred and sixty-four patients have been admitted to the hospital." Of these patients 37 were treated for fistula in ano.

Operations performed 1,115, including 217 extractions of teeth. Total visits to dispensaries 24,216.

A short account is appended of work done in the woman's hospitals in connection

with the same mission, under the care of Dr. MARIAN SINCLAIR.

Speaking of visits at the homes of patients, numbering 424, the doctor says:—

Many of these visits to patients at their homes required the use of obstetrical forceps, and several craniotomies and complete eviscerations with dismemberment were necessary and unhesitatingly performed.

THE LAO-LING MEDICAL MISSION FOR YEAR ENDING FEB., 1894.

F. W. MARSHALL, *Surgeon-in-charge.*

Nothing succeeds like success, so we need not wonder at the opening words of this report.

It is a peculiarly agreeable task to compile a report of work done when it falls to one's lot to record increasing prosperity and advance all along the line, during the period under review. Such has annually been the pleasing duty of the medical man in charge of the Lao-ling Medical Mission, and this year has been no exception to this rule.

That Western skill, as applied to the healing of disease, is highly appreciated by the natives of this district, may be gathered from the fact that, during the year, 10,059 patients have voluntarily placed themselves under our care.

To the year's work there has been an entire absence of active opposition. Occasionally, however, cases have been met with, where delay in coming for treatment has been occasioned by sufferers listening to rumours and statements originating from ignorant and prejudiced persons. An illustration of this may be seen in the case of the parents of a boy who was brought to the dispensary last June. The little fellow was suffering most acute agony from an ulcer of the cornea. This had been aggravated by native treatment, which consisted of snuff made of flour and the heads of matches. This mixture, on being applied to the nostril nearest the affected eye, produced a

result more easily imagined than described. Though perfectly aware of the existence of the medical mission, assistance was not sought for several weeks, owing to the parents having heard a rumour to the effect that the foreign doctor was in the habit of using children's eyes in the manufacture of his medicines.

The principal event of the year has been the completion of the new women's hospital.

The new hospital is a neat and substantial structure, containing five *kangs* with accommodation for as many in-patients. Adjoining the ward is a conveniently arranged operating and dressing room.

The numerical returns are as follows:—

Out-patients	9,383
Seen whilst itinerating	383
Visits to patients at own homes ..	175
In-patients	118

Total ... 10,059

In December and January diphtheria was very prevalent in this and neighbouring villages. The disease in most cases assumed a malignant form. Apart from the violence of the disorder, the huge mortality was probably due to the methods of treatment adopted by the native faculty. As a rule, the means employed were excessive purging and sweating, the use of hot or cold needles, and pinching or kneading of the throat.

At the present time, we are being continually called upon to treat the *sequelæ* of diphtheria; and these cases, coming from distant towns and villages, serve to show how widespread has been the epidemic.

Eighteen cases of leprosy have been under treatment during the year. Chaulmougra oil, internally and externally, has been the most successful treatment. On the supply of this drug becoming exhausted, the internal administration of iodoform proved so successful that its continuance, especially in the tubercular form, was warranted.

Evidences of marked religious interest on the part of many of the patients have not been wanting. All have readily acknowledged "the doctrine" to be good, and

fourteen have applied for admission to the Church.

Requests of this nature are always received with the greatest caution. Although in no way compelled to listen to religious teaching, our influence is brought to bear on them at a most impressionable period,—that of suffering and enforced idleness. There have also been cases of patients seeking for baptism, trusting that such a request would please the doctor and induce him to hasten the cure of their diseases. A prolonged period of probation is therefore necessary, in order to distinguish genuine cases. Several patients have, however, openly declared their intention of renouncing idolatry, and have promised to conform to Christian observances. Among this number were some literary men, who, during their prolonged stay in hospital, manifested their sincerity by endeavouring to teach what they knew of Christianity to their fellow-patients.

THE NEERBOSCH HOSPITAL, SIO-KE.

JULY 1892—JULY 1893.

Dr. J. A. OTTE, *Physician-in-charge.*

Statistical Abstract.

Patients admitted to hospital	...	469
" " " dispensary	...	9,380
	Total	9,849
Visits to homes	...	219
Surgical operations...	...	228

We make a few extracts from the report, giving some cases interesting from the evangelical and professional standpoint.

"Our report for the year just closed must be a quiet one. We have nothing new or startling to record. God has blessed our work, though we have not received that outpouring of His Spirit we have prayed for. But there are indications of coming blessings which encourage and inspire us."

"There has been no increase in the number of visits to the hospital this year, nor in the number of in-patients. In the report of last year it was stated that a decrease in the number of in-patients

during the year 1892-1893 was probable, on account of our furnishing all the food ourselves, and charging a little more for it. This has proved to be the case. Still, the decrease has not been so great as we anticipated at the time, while the hospital has been so much cleaner through excluding the pots and pans of the patients, that we would not readily return to the old method."

Speaking of graduating a class of medical students we were glad to read the following statement:—

"When receiving students we always make it plain to them that, in coming to us, their main idea must not be so much to become doctors as to become more useful members of the Church here in China. With this in view, they are required to take an active part in the evangelizing of this region. Those not willing to do this are not accepted."

"It may not be out of place to allude here to the death of Lun So, for nearly two years the hospital nurse. She was a woman remarkable for her deep piety, though but ten years ago a heathen. Her opportunities were no better than those of her neighbors, but she was far above the average in intelligence. Faithful in the smallest detail, earnest in her efforts to please, diligent in service for the master, courageous in her witness for Christ, intelligently assisting us in operations, we feel her loss is nearly irreparable. During the last year of her life she mourned day and night because none of her sons were willing to become Christians. Many a night she spent in tears, praying for them, and although the pathology of the disease from which she suffered (a peculiar form of stricture of the œsophagus) may not hold me out, still I firmly believe it was brought on by grief. For days before her death she was unable to take food, and only with difficulty was she able to swallow a few drops of water; still, she did not seem to suffer much, for she said: "Have I not

hospital two months; no signs of a recurrencey.

Cavernous Nævus.—An interesting case of this vascular tumour came to us in the summer. Patient, young woman, age 21. Tumour, situated on left cheek; size, pumelo. Had I electrolysis needles, I would certainly have preferred them; but, as it was, we resorted to the seton treatment, and passed several silk threads, steeped in strong lin. Iodi, through the growth, withdrawing them after suppuration had set in. The abscess was finally opened, and a fairly good result obtained.

A severe epidemic of diphtheria also visited the district thinning many a home in the surrounding villages. No less than 216 cases applied to us for treatment.

Just before leaving for our annual meeting in Tientsin, we had a special service on Sunday afternoon in one of the wards, where I had the joy of baptizing two patients, father and son. The son came three months ago, with necrosis of wrist.

About a month after the operation on his wrist, we had, at morning prayers, the subject of the man with the withered hand. Our friend, his face beaming with joy, remarked: "Ah, if the same Jesus were to walk into this hospital and see me lying here, He would not put me on a table, give me sleeping medicine, and then cut me with knives; but He would call out, 'Lao Wên, stretch out your hand.' I would just do as He told me, and go home healed." On the day of his baptism, we had all the children of my wife's girls' school in to the service, besides preachers and assistants. The recollections of that service will linger in the memories of those who were present.

WESLEYAN MISSIONARY HOSPITAL,
FATSHAN, CHINA. 1893.

The writer of this report, Dr. RODERICK MACDONALD, dwells chiefly on the interest of a new feature in their work. He says: "Attention is being directed to Fatshan

because this hospital is no longer in need of subscriptions. A medical missionary in the North has recently written asking for details of the methods in vogue here. Another, who intends to open a hospital, made a special journey to Fatshan; and another has signified his intention to visit the place early in 1894. The report of 1892, written by Dr. WENYON, gives a very full account of our methods."

"At the commencement of the hospital in 1881 the Wesleyan Missionary Committee stated that in their opinion the working expenses ought to be met by patients' fees and subscriptions collected on the spot."

"The committee was not prepared to pay more than the rent of the premises and the cost of whatever means were associated with the medical work for the attainment of those spiritual results for which the mission exists. The income from fees and sales of medicines was at first insignificant, and current expenses were then provided for by subscriptions: but gradually the income from native sources improved until in 1891 the need for subscriptions ceased."

"Indiscriminate charity—as everybody knows—is injurious and unjustifiable; nor does the excellence of the motive which prompts it abate anything from the evil consequences. If charges be graduated according to each patient's ability to pay, no one is wronged; and the evils of indiscriminate charity are avoided. When a poor patient has done what he can, the true charity, freed from the fear of any evil consequences, will seize the opportunity of lovingly providing the rest."

For visits to patients at their homes, "the customary fee for first visits is \$5," and the patient is expected to pay chair or boat hire as needed.

In a case of arsenical poisoning of six men "no fee was demanded while the men were in danger; but after they had been saved from a horrible death, the wealthy merchant proved his gratitude by presenting a large ornamental tablet to the

hospital, and by paying \$120 for the treatment."

In a certain obstetric case the charge was to be \$25 for delivering the mother. "If a living female child were born, \$5 extra would no doubt willingly be given, but if a son, \$10 of course." The charges were paid.

In another case \$40 was paid for attendance and medicine. A district magistrate's son paid \$30 for an operation for stone in the bladder. During the last week of the year, the catechist was directed to open a subscription list in aid of his own salary and the expenses of his preaching hall.

Ten in-patients have already subscribed small sums; and should he continue as he has begun, in future, the evangelist will derive at least half his salary from the subscriptions of the heathen who listen to his teaching.

The excess of this year's income from fees and sales of medicines over last year's income from the same sources is \$683.21. In pursuance of a promise at the beginning of the year to divide 1/10th of such surplus among the native assistants, and paying 1/10th to the house-surgeon, a bonus of \$136.64 has been divided among the employés.

The receipts in full are given as below:—

Balance from 1892.....	\$ 29.27
Sales of medicines.....	984.47
Fees from patients in hospital	1,189.58
Fees from visits to private patients	789.34
Total receipts in hospital.....	2,992.66
New cases, out-patients	2,946
„ „ in-patients.....	220
Private patients visited at home.....	85
Total new cases...	3,251
Return visits of out-patients.....	3,489
Second visits to private patients	120
Total attendances ..	6,860
Number of out-patients treated free..	1,634

There were 137 operations performed, among them 17 being for stone in bladder.

THE LONDON MISSION HOSPITAL, WUCHANG.

*Under the charge of A. M. MACKAY,
M. B. C. M.*

This is the report of a young hospital, having just completed its first year. It is gratifying to know that the number of patients who visited the dispensary was 1,526 first visits, and 1,641 return visits, a total of 3,167 patients. The doctor looks upon the 200 visits paid to patients in their homes as a most important work. At one of these visits he met the following touching case: "... Some time afterwards, the eldest son, a lad about 17, had an attack of quinsy, and while visiting him one day, his father told me that my patient intended to become a member of the Church, as soon as he got over his illness. Since that time he has attended the services in the chapel regularly, and speaks to his mother, sister, and brothers about the doctrine. One of the first questions he put to me, was about his little baby brother who had died. He wanted to know if it was really the devil who had taken him away. If not, where then was his little brother, and if he were to enter the Church would be able to get his baby brother into heaven?"

There being no hospital in connection with the work the consulting-room and dressing-room were turned into wards, and between twenty and thirty in-patients were thus accommodated, the majority being cases of accident from the government cotton mill.

CHUNG-KING HOSPITAL. METHODIST EPISCOPAL CHURCH. 1893.

J. H. MCCARTNEY, M.D., *Surgeon-in-charge.*

We have made a number of extracts from the above report, showing a work full of encouragement.

Total number of visits 3,166.

The work has been carried on as formerly. The dispensary having been open on Mondays, Wednesdays and Saturdays from 3 o'clock to 5 o'clock in the afternoon. The present year 1894 we are planning to open

another dispensary in the lower and un-occupied quarter of the city.

The first of the year we tried the plan of charging twenty cash for the first visit made to the dispensary. It worked all right until the natives found that the other dispensaries in the city were not charging, then the numbers commenced to fall off. After three months' trial we gave it up. Our charges for visits in the city for ordinary cases is 500 cash for labor, and opium suicides 1,000 cash and chair money.

The highest fees received during the year from Chinese patients were ten Taels for attending a labor case in the country, and thirty Taels for removing a large sarcomatus tumor from a lady's breast in her own home.

495 patients have been treated in the wards. The charges for in-patients are two thousand cash a month in the public wards, and three thousand cash in private rooms.

Speaking of the health of the community in general, Dr. McCARTNEY says: We had no revisit of the dreaded cholera, which visited us last year and resulted in many thousands of deaths. Here is something for the home scientist to theorise on. Why did we not have a revisit of cholera when it was so severe a year ago? May we not suggest two reasons which have occurred to me: First, Might it not be due to the Chinese method of disposing of the human excreta? Second, Might it not be due to their open system of drainage?

193 major operations were performed, 280 dispensary operations, and eleven teeth filled. Four cases of hip joint disease were operated on by resection, all doing well. There was considerable shortening in all except one case where it was slight, good motion recovered in all. Three cases of excision of the elbow, resulting in good recovery for two.

One case was for the removal of a piece of wood from the rectum after 13 days' retention. With the greatest care, it required the combined strength of two men to

deliver it. The patient suffered considerably during the operation, and prolapse of the rectum followed. The rectum was packed with cotton to control the hemorrhage which followed. The piece of stick measured in length $7\frac{1}{2}$ inches, in large diameter $2\frac{1}{2}$ inches, in small diameter 1 inch. We are at a loss to account for the lack of more abdominal symptoms. One would naturally suppose that they would be produced after so long a time. The patient died on the morning of the fourth day, having had no movement for seventeen days.

Evangelistic Work.

The more we have to do with medical work the more we realize the fulfilment of that blessed promise, and although we are gathering but few into the Church at the present we are expecting a great ingathering in a few years.

Three preaching services are held each week, on Monday evenings, Friday evenings, and on Sunday afternoons.

A service is held for in-patients from half-past eight to nine o'clock each weekday morning. A portion of Scripture is read, every one who will reading in turn, after which the portion is explained, a hymn sung and prayer made.

A large number who have desired to have their names taken on probation have been told to return to their homes, to remove all heathen rites, and when we had the opportunity to do so we would call upon them and take their names, providing they were still faithful. This is a work we desire very much to do, and believe that a great harvest could be gathered.

THE C. I. M. HOSPITAL AND DISPENSARY AT
CHEFOO.

A. W. DOUTHWAITE, M.D., *Physician-in-charge.*

Year ending 31st March, 1894.

Dr. DOUTHWAITE speaks encouragingly of his work thus: "The medical work has steadily increased from an attendance of three thousand patients during the first year

to over fourteen thousand during the year under review, and it appears likely to grow still further, as it is difficult to set a limit to it.

Several large military camps have been recently established east and west of Chefoo, and these have added considerably to the number of our patients, notwithstanding the fact that the officials have provided a special hospital and dispensary for the benefit of the soldiers."

The question of charges for attendance and medicines comes to the front as usual. We give the words of the report.

No charge is made for medicines, except for one specific disease, and for the opium habit. The practice of medical missionaries with respect to charging for medicines varies considerably, some believing that indiscriminate charity has a pauperising influence inimical to the best interests of those whom it seeks to benefit, while others contend that, if any charge is made, no matter how small, the mission dispensary is degraded from its proper position as a charitable institution, and is placed, in the eyes of the Chinese, among the meanest of trading concerns, whose object is to make money while professing to "do good deeds" toward the poor.

Two pence seems to us a paltry sum to charge for a consultation and a bottle of medicine, but when a man who has a family to support on a daily wage of only three or four times that amount has paid even so small a "fee," it would be hard to persuade him that he had anything to be very grateful for. In some places the majority of those who seek medical aid can afford to pay a few cash for their medicines, but the poverty of Eastern Shantung is so deep and pitiable, that, even if one were inclined make a charge, he would not "have the heart" to do so.

"Under the head of opium smoking the following opinion is given. I take this opportunity of declaring once more that I consider the trade in opium between India

and China is a terrible curse to the latter country, but the cultivation of the poppy by the Chinese themselves is a curse of still greater magnitude."

"There is no denying the fact that England is largely to blame for the widespread abuse of opium in China, for when the Chinese government tried to stop the trade in that drug, foreseeing as they did the evil it would bring upon their nation, the English brought such pressure to bear upon them that they were compelled to yield. The mischief is done, and cannot be undone by any legislation in England or India. The cultivation of the opium poppy has become so universal in China that this country is almost independent of India for supplies of the drug, and will ere long be able—if willing—to cease importing it.

In Shantung, for instance, the Indian opium imported has decreased during the last decade from about 3,000 piculs (1 picul=133 lbs.) to 300 piculs, but the native product has increased in the same period from a mere trifle to over 28,000 piculs per annum.

The Chinese are free to deal with imported opium as they please,—for another "Opium War" would be an impossibility,—but I doubt the power of the Central government to control the cultivation of the poppy in their own country, even if they seriously entertained the desire to do so."

REPORT OF CANADIAN PRESBYTERIAN MISSION IN NORTH HONAN.

The fifth annual report of this mission contains an account of its medical work in Chū-wang and in Hsin-chên. The work in Chū-wang is gratifying not only because the number of patients has increased but on account of the almost unlimited confidence with which they submit themselves to treatment. There are many cases of opium poisoning with suicidal intent, but such is the faith in the foreign help that the would-be suicide is brought to the physician early

instead of as is so often the case when all other means have failed. The cases of opium habit treated here have proven as so often elsewhere not encouraging. In this hospital the cases of scorpion sting were all treated by hypodermic injections of cocaine at the site of the sting with almost instantaneous and complete relief of the agonizing pain. Usually about one-fifth grain was injected, and only once or twice was it necessary to repeat the injection. The joy and gratitude manifested by these patients at finding themselves free from pain is refreshing to note.

Hypodermic injections of cocaine were also used in the four cases of harelip operated upon with most satisfactory results; the patients, two of whom were boys, not seeming to feel any pain, and the cocaine not appearing in the least to interfere with union of the wound as it has been thought to do by some; great care of course was taken to have needle and solution perfectly aseptic.

So often the medical worker, especially in the interior, feels surely the need of understanding help and sympathy. Here fortunately there is not this need and during the year the great advantage of two medical men being at one station has been frequently realized; on several occasions operations were undertaken that would have been too serious and difficult to do single-handed. Mutual aid and counsel were given in perplexing cases in connection with foreigners as well as natives. The advantage was also seen this summer, in that while one physician was absent for a health change the work at both stations was carried on without interruption. During the autumn Dr. McCURE, in company with Mr. MACGILLIVRAY, made a tour to the west and north-west, while Dr. MALCOLM again took charge of the work at the station as he had done during the summer.

At Hsin-chên the attendance was much interrupted during some months, by the circulation of stories about foreigners,

but the uneasiness and suspicion thus aroused died away, and during the year 5,628 patients were seen, 153, surgical operations performed and 55 teeth extracted. This work has been done without proper hospital accommodations. Some patients were kept in the street chapel, some at the native inns, necessarily few major operations have been performed. Dr. SMITH and Dr. McCURE have been able to oblige one another. Dr. LUCINDA GRAHAM is now on the field and will soon undertake the woman's work. She has already done some work, but naturally the language monopolizes the new-comer's first year. When they will be able to procure suitable accommodations for the hospitals, it seems that this work will have a most bright future and we add to theirs our sincere wish for their every success. Without a place for in-patients much of the direct influence of the medical work as an evangelizing agency is lost, and a person sometimes feels that it is a waste of time and energy. We are thankful, however, that God has owned this department of the work, and that quite a number of those who have taken any real interest in the Gospel have been influenced by the blessing of God on the medical work.

M. H.

MISSION HOSPITAL AT SWATOW IN CONNECTION WITH THE PRESBYTERIAN CHURCH OF ENGLAND.

This report gives in most compact form the statistics of work done, names of subscribers and a statement of income and expenditure for the years 1892 and 1893. The statistics of work done is so wondrous pleasing that I give it in full.

Statistics.

Number of individual patients :—

	1892	1893
In-patients	2,544	2,766
Out-patients	4,115	4,586
Total	6,659	7,352

	1892	1893
Females included in above ...	1,209	1,317
Visits to Chinese patients in their own homes ...	325	371
Daily average number of in-patients ...	157	176
Average attendance of out-patients on dispensary day ...	67	73
Total number of visits of out-patients to the dispensary (incomplete) ...	11,872	13,237
Number of surgical operations	984	1,118

A Bible woman and a native colporteur have been added to the staff.

The work of the Bible woman is thus sketched by one of the ladies of the mission: "To work among the women a Biblewoman has been engaged whose duties are in the main two-fold. One is to teach the brighter ones to read simple tracts, and the Hyman book, or as much of it as may be learned during their limited stay in the hospital. To this work the Bible woman is expected to devote the afternoons, while her morning hours are given to work in the wards among those who cannot leave their beds; the old, the stupid, the blind, and the partially deaf being her special care. It is hoped that through the faithful discharge of her duties few women will leave the hospital without some knowledge of the Gospel. The Bible woman is herself one of the fruits of the hospital. Less than six years ago she entered it as a heathen, and was for months intellectually convinced of the truth of the Gospel before her heart was touched. Since then she has made such advancement in intellectual and spiritual knowledge that she commended herself as suitable for the work indicated. In connection with the evangelistic work, classes have been maintained during the years by the agents of the W. M. A.; and other ladies have more or less constantly visited the females' wards, and have done good work.

Assistance has been rendered by Dr. HENRY LAYNG and Dr. B. P. COUSLAND. Funds sufficient to build a woman's hospital are in hand, which will be utilized as soon as a suitable site can be acquired.

A few remarks on two ovariectomy operations close the report of this telling and flourishing work.

M. H.

THE LONDON MISSION HOSPITAL,
HANKOW.

In the 29th year of its existence, the workers in this hospital have been doing once again that which has been in the past done so often, going over the same old ground of conjugating in all its moods, tenses and inflexions the prejudices of the people. These were kindled in men in 1893 by the murder of our Swedish brothers at Sung-pu.

In connection with the men's hospital is now the Margaret Hospital for women under the charge of Dr. HARRIS GILLISON, assisted by her sister Miss HARRIS, the statistics of which are merged with those of the men's hospital. At the close of the report is the ordinary classified list of surgical operations, and of cases, which number 550, treated in the wards, the list of subscribers, financial statement, and what is not so usual, and is of much interest a list of "occupations" of patients. The farming class easily lead the number, and for this reason no doubt the dispensary hours are to begin at 10.30 in the morning instead of one in the afternoon. This change will enable the country patients to leave for their homes earlier in the day. A glance at this table of occupations shows that a large number must come from other parts of the province, and knowing the cheerful spirit in which this great work is always done, we too feel that in these wards in Hankow they "are helping to dispel the delusions of Hunan and are gaining friends for missions in many a remote district where foreign foot has not yet trod." A large number of cases of opium poisoning and smokers of opium have been treated, After some notes to medical readers comes the evangelistic report which shows that the

promise, "My words shall not return unto me void" is being fulfilled, for not only has much seed been sown, but some few sheaves have been gathered in, and many convinced if not converted. One case is so interesting we quote it entire: Mr. SHENG was a military graduate from the province of Kiangsi; his home being distant from here some 200 to 300 miles. He came to be treated for an old injury to his elbow joint. The joint had to be excised and we have good hopes that he will have a fairly useful arm. He listened carefully to the preaching, read Scriptures and tracts, and was constantly learning all he could from our beloved and faithful evangelist, Mr. TSANG. When the time came for him to leave he told us he was coming back to be baptized next year. It so happened in God's providence that the morning he intended to go, a word was put into the missionary's mouth that went straight home. The subject of that morning address was persecution. It was pointed out that if any become Christians they would have to suffer persecution, but that if they did not honour Christ before men, neither would He honour them before His Father in heaven. At the close Mr. SHENG stood still after the others had gone. We said to him, "You are going home to-day?" "Well," he said, "I meant to go but after what has been said this morning I cannot go, I feel it would be dishonouring God. I was not going to be baptized because I feared my friends and people. Now I have made up mind to be baptized before I go. I know I shall get persecution but I know God will keep me." Praise the Lord for such testimony. He was baptized and has gone to his far away home in Kiangsi, but God goes with him and abides. In conclusion we would hope with them that the year to come may be one in which many shall pray for them, fervently and believingly, and they shall see "greater things than these."

M. H.

HAO-MENG-FONG HOSPITAL, NINGPO.

How restful to the tired eyes the picture type which greets us on opening the eighth annual report of this hospital, and how pleasant to see what fair measure of success can be obtained by faithful native workers when unassisted by the foreign physician. The predecessor of the present incumbent resigned his place in April, and it remained unfilled until the following December, and in May the hospital lost the services of Dr. DALY, thus leaving the medical work solely in the care of the native assistants for over six months, and we all know how much the new-comer finds to perplex, yet the past year has seen treated in their dispensary 4,123 patients, and in the wards 129 of which latter 16 were women, and 28 opium-smokers. A new and interesting feature of this report is the digest which has been made from the dispensary patients in order to learn the diseases most prevalent in the neighborhood of Ningpo. This neighborhood represents districts within a radius of 70 miles. The following list is the result. —

Disease of the Skin...	19 per cent.
" " eye and ear ...	16 "
" " digestive organs	15 "
Chronic Rheumatism ...	13 "
Bronchitis and Asthma ...	8 "
Malarial Fever... ..	7 "
Tuberculosis	3 "

A short description of daily clinique closes with "and so the time of clinique goes by. Some cases have obtained complete and permanent relief, some must enter hospital, on return for further treatment. Others, alas! are hopelessly incurable; but even their visit, we trust, has not been quite in vain. They have heard Glad Tidings of One who came to "heal the broken hearted" and guide them to the land where "sorrow and sighing flee away," where the eyes of the blind shall be opened, and the ears of the deaf shall be unstopped." Dr. SMYTH closes his report with thanks to Drs. MOLYNEUX and GRANT for

assistance given, and the Rev. Mr. HOARE in reporting on the evangelistic work says, The longer this work goes on, the more deeply am I impressed with the widespread Christianizing influence of medical mission work. We may not always see the results, but we see enough to convince us that they are very real, and very widespread. Thus last autumn when travelling in T'ai-chen, 120 miles from Ningpo, I examined and accepted for baptism two men who had first learned the Gospel in the hospital, one within the year, one some two or three years before. Others who had heard of the

Saviour in the hospital were baptized during the year in Cü-kyi, distant 140 miles and in outlying districts of the Ningpo prefecture, some by members of our own mission, some by members of other missions, for in this vast field we think it better to encourage converts to unite with any body of Christians that there may be in their own neighborhood, rather than to hold them as isolated members of our own mission in places where they could be but rarely visited." A list of subscribers and the financial report is annexed.

M. H.

CORRESPONDENCE.

It is with much pleasure that we avail ourselves of the permission of publishing the following interesting letter.—(ED).

CANTON, CHINA.

May 8th, 1894.

DEAR DOCTOR BOONE.

Your article in the *China Medical Missionary Journal* on "How can the Medical Work be made more helpful, etc." I read with pleasure. It is the kind of medical reading people, in the home lands, enjoy. It gives them a clear idea of the general plan on which the work is being conducted; and, that if followed out, must ultimately permeate the empire.

Can we not have more such articles?

During my recent vacation in America, I was greatly surprised to find how fascinating is the subject of medical missions to Christian audiences.

Many asked where they could read about it, without having to read medical literature.

One prominent physician said, "Your doctors in China don't write half enough to satisfy us." I have some such feeling in regard to those North of us: I want to know more about the work, and especially that done for women by women.

There is no nobler calling in life for those women who have leisure to engage in Christian philanthropy, than that of a medical missionary.

While it is true, the most thorough work can only be done in a hospital, yet an inestimable amount of good may be accomplished through dispensaries alone. By means of the four I have in this city, of over a million, thousands of families are yearly reached with the Gospel. While the

patients await their turns the Scriptures are attractively explained. A tract is given to each new case and a cordial invitation to be present the following Sabbath.

We are often encouraged by hearing one and another assure us of the total overthrow of their belief in idols. A few weeks ago a woman came to have her eyes treated. She was a devoted idolater. After several visits her spiritual sight was brightened, and she returned home a firm believer in her Saviour. She gathered all her paraphernalia connected with idolatrous worship together and burned them in the presence of the assembled household. At the following communion she expected to present herself for membership, but was suddenly stricken with "the plague." Her heathen relatives came to tell us of her death and that she truly believed all she professed. This is but one instance of scores.

A missionary of another denomination said, since the dispensaries had been opened in different parts of the city, she noticed in her house-to-house visitation the prejudice had greatly lessened. Out-calls have largely increased and many of the natives have been "provoked to good works" by opening "rival" dispensaries. I am hoping soon to accompany Mr. Fulton to his country station which he visits with what you suggested, a medical boat; and open several medical centres at the larger towns. If some more would only "come over and help us," by carrying on the work "ready at hand," we could then press into the "regions beyond."

Two of the dispensaries are in the heart of the plague stricken region. Sad, indeed, are the tales of woe bereaved ones pour into our ears.

It seemed a few days ago, as though there was almost "no house in which there was not one dead." "The plague" began in the old inner city in the Moham-medan quarter; one hundred dying on one street a few squares long. One man stationed at the West Gate began at nine o'clock in the morning to drop a cash into a box each time a coffin passed him. At 4 p.m. he counted one hundred and seventy cash. Coffins became scarce and then impossible to obtain, until brought from neighboring towns. Children were put in baskets or wrapped in a piece of matting and buried. From this district where the dirt is thickest and the houses most crowded it spread to the outer portions and now it has reached the country and people who fled from the city there know not which way to flee, and the idols are being worshipped in an extravagant and frenzied manner. The past few months the people are forbidden to reckon, and the "new year" began last Saturday. All night the "new year" sounds were kept up and amidst so much ghastliness an attempt at outward adornment and gaiety was apparent.

It is impossible to ascertain the number of deaths. I sent two trusty assistants to try every means to get at the truth but they found it impossible. The officials try to suppress the facts. At the largest charitable (native) dispensary, a notice at the door says, up to date, two thousand coffins have been given away. My assistant was privately assured this is far below the actual number. I asked him if he thought twenty thousand had died: he said yes three times that many. He went through a number of streets and said he was surprised to see within the open doors a dead body when outside was no "white and blue lantern" or other "always present" symbols. Many made no attempt at the usual noisy mourning. The dead were silently carried out with not a follower. In one house all lay dead—ten.

The thermometer on our verandah has not registered over 86° this summer. We have had *very little* rain during this our "rainy season."

The accumulated filth seems to increase daily. As I see the decaying débris piled high on almost every corner, and see the utter lack of any sanitary regulations, and think of the ignorance of the people regarding laws of hygiene, I am not so astonished to hear of the death of hundreds, as I am to find the multitudes living on, in spite of neglecting such important factors pertaining to health.

According to all hygiene teaching the whole race ought to have become extinct!

I believe if we could have *hundreds* of dispensaries scattered broadcast we could impress the people with the fundamental necessity of cleaning their homes and streets at such a terrible time as this, instead of spending additional thousands of dollars in begging idols to cause an abatement of the epidemic.

I hope you may be spared a visit of the scourge in your part of the country.

We are expecting Dr. Kerr to return from his vacation in a few weeks.

Sincerely yours,

MARY H. FULTON.

PHILADELPHIA.

March 20, 1894.

Editor of

"CHINA MEDICAL MISSIONARY JOURNAL."

DEAR SIR.

It is quite a privilege for the China practitioners who have furloughs at this time to see what is being done in the "home" hospitals; and especially in the field of gynecology, is rapid, certain, useful and aseptic surgical work noticeable. Prof. E. E. Montgomery in his private hospital lately occupied fifty minutes in the following procedures. Patient a middle-aged lady, in easy circumstances finan-

cially, but with enlarged flabby cervix, prolapse, flaccid vaginal walls, etc.

(1) Uterus rapidly dilated by introduction of graduated bougies.

(2) A hollow handled curette, through which a stream of antiseptic fluid played continually from an ordinary fountain syringe, was used to scrape thoroughly the diseased endometrium. Iodoform gauze drainage.

(3) An old laceration of cervix which threatened to be the seat of future malignancy was excised in V shape, flaps brought into apposition and stitched together, cervical canal insured by the drainage gauze.

(4.) Perineal body insufficient, and anterior and posterior walls of vagina far apart; therefore—Scissors used to make a diamond shaped square in the mucous membrane, the four sides of the diamond being from a third to a half inch wide, one apex at fourchette, other apex at posterior vault edges of wound brought together partly with silk, partly with silk worm gut, former to remain, latter to be removed early. On trying the sutures the posterior and anterior walls of vagina were found in apposition and lumen of vagina much contracted. Shot not used.

(5) Sphincter ani stretched with the thumbs.

(6) Protruding piles were partly cut and partly tied.

Rigid aseptic, and antiseptic precautions at every step. No hurry, no audience, no object but patient's welfare. Hypodermic of $\frac{1}{10}$ gr. Strychnina—fifth day patient doing well.

These procedures are all possible in a mission hospital if there is a willing patient. A Chinaman in the shop could improvise the hollow curette by attaching a curved piece of clock spring to a silver catheter and attach fountain syringe to catheter. The graduated uterine bougies would more likely be in lady physician's

armamentarium than in gentleman's, but could be made cheaply from brass.

Yours truly,

H. M. McCANDLISS (of Hainan).

CHINKIANG.

MY DEAR DR. MATHEWS.

In answer to your letter I will give you a brief account of a case yet not a case.

Some while since I was called upon to attend a parturient woman within the city walls, and upon arrival at the house found in attendance a wrinkled old lady who had often preceded us on similar occasions, always having done her very worst, and delayed sending for help until the victim was moribund.

For once in a lifetime we wished we were a man so that we could conscientiously express our feelings, but the fact that the offender was a woman coupled with an habitual regard for the dignity of the sex prevented such a breach of decorum.

We faced the music and said with an air of unwonted bravado, Will you give us that stove, our hands are cold (she was toasting her toes), at the same time reaching for it. It was proffered with a grunt. So much gained. Will you kindly put aside that pipe for a few minutes? (she was filling the room with smoke) while we attend to this case? The pipe went down at her side to be resumed in two seconds.

Why, this woman is nearly dead, we exclaimed as we felt her pulse. "I know it" was the imperturbable response, puffing away at the long pipe.

Then why did you send for me, was added rather sharply. Puff, puff, came the smoke but no reply.

The woman was past help, a fact quite patent to all and it was time to beat a retreat.

In the room through which we had to pass were not only the sisters and cousins and aunts but an equal number of male relations who bumped their heads on the

ground begging us to deliver the child. The women took hold of our hands, clung to our garments and nearly tore them from our shoulders trying to detain us, while the old lady stood unconcernedly smoking with a mouth that could well be compared to the crater of a small volcano.

We have had a number of like experiences and have learned to make a stipulation with the family that if neither mother nor child can be saved, we be permitted to quietly withdraw to avoid such unnecessary and heart rending scenes.

The terrible superstition that if a woman dies with an unborn child she will for an indefinite period of time float in a lake of blood is well known and accounts for the frenzied concern of relations at the last extremity.

Medical ethics as well as social get sadly confused at times and a question might here arise, but would not yielding to the urgent appeals of the relations, be the means in many cases of postponing foreign intervention with the confidence that if the woman dies she will yet be delivered and escape the horrible fate of the bloody styx or if the woman dies in the operation will the unenlightened Chinese in their calmer moments be likely to exonerate the physician from all suspicion of blame? We fear not.

I am,

Sincerely yours,

LUCY HOAG.

CHIEFOO.

May 29th, 1894.

DEAR DR. MATHEWS.

I have written to Dr. HODGE about the proposal to affiliate the China Medical Missionary Association with the Red Cross Society, and have proposed as an amendment that the matter be left open for a year, in order to give members of our Association time to think it over, and discuss through the medium of our Journal the advisability or otherwise of uniting with

a society the rules of which some of us know very little about.

The noble and heroic work done by that society is well known, and highly appreciated in all civilized countries, but before voting for affiliation we should carefully consider what responsibility we incur. I, for one, would be glad of further information as to the rules and methods of the Red Cross Society, to enable me to decide whether or not I as a missionary am free to join it.

Yours fraternally,

A. W. DOUTHWAITE.

April 28th, 1894.

To the Editor of

"THE CHINA MEDICAL MISSIONARY JOURNAL."

DEAR SIR.

The question as to whether opium is or is not a prophylactic in malarial fever is a very important one from many points of view. I myself have, for some time, been seeking all the light I can obtain upon this point, and so far my enquiries have resulted in the conclusion that it is *not*. I am quite sure though that such a use of it is neither known nor practised by the natives round Hankow.

When I read your short leader on the subject I must confess to a feeling of disappointment, for, with the exception of one short paragraph referring to the action of Narcotine, there is only a general statement, based on personal observation, that opium is of value in mitigating the symptoms of malarial fever. I am especially disappointed that you did not give us some of the *facts* drawn from your experience in China. Can you, or any one else, publish for us, in the Journal, a series of cases in which opium has been used successfully as a prophylactic agent in malarial fever? Can you, or any one else, give us a series of cases in which opium administered *alone* has been successful, as Quinine is, in breaking the periodicity of, and finally curing, a

Tertian Ague? For this, and only this, is what prophylactic means, if I understand Greek correctly. I have been struck, in many communications in the various journals on this subject, with the general evasion of this very clear issue, and a substitution instead of general statement, such as you quote about the hot stage being shortened, etc., etc. All this is quite beside the mark. We all know that opium, in small doses, is useful in all chills and fever, of whatever sort. Dover's Powder, Tt. Camph. Co., Chlorodyne and various other preparations have, for a long time, been so used. But this does not constitute opium a prophylactic for malarial fever. Aconite will antagonise chill and is largely used in the hot stage of malarial fevers, and Antipyrin also, but I have never heard a suggestion that this action constituted either drug a prophylactic for ague.

The want of a large reference library has prevented my searching out the clinical testimony as to Narcotine. RINGER is the authority who is responsible for the statement you made, and I find a couple of references to it in Martindale's Extra Pharmacopœia—it is worthy of note, however, that MITCHELL BRUCE in his Therapeutics, latest edition, does not even mention it. While I do not deny the truth of your statement, yet it seems to me the disuse into which the drug has evidently fallen is presumptive evidence that its value, in this direction is not great. But granting it is true that Narcotine has these powers, it does not follow that opium has. We have many examples in medicine of one alkaloid of a drug, when isolated, having properties which are quite lost or insignificant in the composite drug itself. Now Narcotine is only one, out of some 12 to 14 active constituents in opium, and only enters into from 4 to 6 % of its composition—it is therefore not a thing to be wondered at if the crude drug has feeble, or no antiperiodic properties at all. I note that Dr. DUDGEON, whose expert experience in China and especially on the

opium habit none will deny, writing to the *Lancet*, Vol. 2, 1874, p. 882 denies that opium-smoking is a preventive of malaria, an opinion with which my experience so far agrees.

Patiently awaiting further light on this point,

I am,

Yours sincerely,

SYDNEY R. HODGE.

[Dr. HODGE, who by the way we are heartily glad to learn is improving in health, evidently wishes us to justify a statement made in the March number of this Journal, with regard to the use of opium in malarial fever. We must, *en passant*, admit a feeling of amused wonderment at the reiterated expressions of disappointment, that we did not, within the space of a very short editorial paragraph, incorporate a series of cases corroborative of what may possibly appear to be somewhat advanced views in this respect. However upon looking into the matter, it appears very doubtful as to whether Dr. HODGE's views and our own do so entirely conflict, and that any existing difference of opinion is but one of degree only. Though we frankly admit that when we penned the few lines in question, the possibility of professional criticism did not occur to us, yet we regret that our remarks were not more intelligibly worded. We must recall, that, we wrote "Apropos of the Royal Commission on Opium" and our idea then was rather to personally protest against those who made such sweepingly condemnatory statements with regard to the use of opium in any shape or form in malarious districts—coupled with a desire to reprove the intolerable censure lavished by anti-opium writers on those who do not altogether entertain their views. Now, passing on to the more professional phase of the question, we did not, and cannot contrast opium with quinine, and to avoid any possible implica-

tion of 'evasion,' we add that we believe our experience has taught us, that opium is of greater value as a *prophylactic* in malarious districts than is generally acceded to either by our text books or by many medical men. And again we urge that quinine, primarily, is neither a *prophylactic* in malarial fevers, in the sense that opium is, nor is it *prophylactic* in the full sense of its derivation (*προ ψυλασσω*). Further we firmly believe, as we have stated before, that opium not only *materially* antagonizes the inception of the malarial amoeba, but *materially* mitigates and relieves the succeeding phases of malarial fevers. This is not a general expression of opinion, but is one based on an experience, borne of some fifteen years practice in malarious districts. Now, touching the *Prophylaxis* of quinine in malarial fever, it is well-known that the drug remains in an almost unaltered condition for a considerable time in the blood, and but very gradually disappears, so that the young amoebæ and spores are kept in constant contact with it, and are hereby checked in their farther development, and it is here and here only that the *prophylactic* action of the drug comes in—for quinine is really nothing more or less than a direct *poison* to the malarial parasite.

Under stress of work and weather we, for the present, would fain be relieved from committing ourselves with regard to the question of the varying alkaloids, their organic bases or even their proximate principles, yet it must not be ignored referring to the alkaloids of opium that they possess a very closely analogous composition.

We note that the foregoing written from memory and away from home may hardly be considered as a categorical reply to Dr. HODGE's letter. However, it must under existing circumstances suffice for the nonce. Meanwhile contenting ourselves with a brief comment with regard to the introduction of Dr. DUDGEON's name. "This is

quite beside the mark" as far as we are personally concerned—for not only can we parenthetically infer, but know, that we, in China, are not entirely at one with regard to some phases of the opium question. Be this as it may. It neither controverts nor detracts from an expression of opinion in the which we are all, in perfect good faith and perfect good nature, prepared to 'gang our own gait.'—ED.]

Shanghai, 2nd July, 1894.

DEAR DR. MATHEWS.

Herewith a short résumé of my observations on the alcohol and opium habits in China.

It has been my good fortune never to have met a Chinese woman, and but few Chinese men addicted to the alcohol habit. It is often said the foreigner does not have any influence on the natives of this land. This is a mistake. One, among many of the facts, that has come under my notice to verify the contrary is the following. Sometimes here as elsewhere the doctor becomes interested in a patient's life history. In one such of my cases, the husband was out of employment. I inquired of his last mistress if he were a good servant, that I might know how to recommend him. Very good indeed, but impertinent, was her reply. He occasionally gets drunk, and one day when I was talking kindly to him, trying to show him what a bad habit it was, and wanting him to promise me he would break it off, he turned to me and said that he had learned to drink at my house, that I drank, my husband drank, my guests drank, and asserted most impudently that if my husband or his guests were compelled to be on duty—after a dinner party—their daily condition would be much worse than his had ever been. One *could* do nothing but discharge him after that. In connection with this habit the Chinese opinion of the foreigner is peculiarly edifying. One evening, when in an inland city, I was invited to

dine with four Chinese ladies of high social position. They were *first* wives and I was the first and only foreigner ever seen by any of them. I had previously met one of them professionally. During the dinner noticing that I did not drink the wine set before me the hostess apologized for not having champagne as of their wines none could compare with this most excellent beverage. I replied that I had tasted the wine and liked it fully as well as I liked champagne, but that I did not drink wine as a rule. Do you not drink it daily? asked one of the guests. No, I answered, I very seldom drink any. Then there was a chorus of astonishment. Each had heard, and believed that all foreigners drank champagne at each meal, and often between meals. They were much surprised on receiving my assurance that among my acquaintances not one drank champagne three times daily, and many of them never tasted liquor of any kind at any time. In truth, though their expressions of marvel were most polite and profuse, I left with the consciousness that their surprise was greater than their credulity. One day I was called to visit a Cantonese woman in Shanghai who was sick. On my entrance she asked, Will you have some tea? No, thank you. Some coffee then? No, many thanks but I do not come for anything to drink. Some soda water? No, nothing, thanks. Some raspberry, some strawberry—we have plenty. I looked at the side-board and thought she had more than a plenty so numerous were the bottles in and around it—and desiring to ward off the task of refusing each kind there represented—made an effort to discuss her illness, but she was a nervous woman on hospitality bent and my efforts were futile. Wont you have some wine? We have many kinds. No, no my dear woman. I seldom drink wine. Just a little claret wont you. I shook my head negatively. At last she said, "The champagne is very good, you will have some of that"? "You are very kind but I never

drink wine unless I think it necessary—as a medicine you know." She hesitated a few moments then in a tone in which one might cry "Eureka" mingled with a note of shame for not having sooner recognized my taste she cried, "You *will* have some brandy and soda" and had it ordered before I could say No, thank you. When I left the brandy and soda was untasted. This must have been convincing proof of my statements that I did not drink alcoholic drinks as a beverage for on my return home I found, with her compliments, a supply of soda water. These are only a few out of many that have persuaded me that in whatever else the foreigner has failed he has succeeded in convincing the natives that the foreigner drinks. The opium habit I find most among the upper classes and in these among the first wives, for unless the first wife is so subject to the habit herself, that she is indifferent to all else she will not permit the concubines to indulge too freely in this fashionable vice. These women have such a confined and limited life—existence more properly speaking—and often an unhappy one. Even among the best educated the resources are so limited. Many of these must feel as a friend of mine, who said when I suggested that she fill up her time with her music and by writing poetry, that she had not talent enough for either not to find devoting her whole time to them more irksome than doing nothing. It is wonderful to what degree the capacity of doing nothing can be cultivated. And her slaves were too numerous, her social position too high to permit any but intellectual pursuits or social pleasures, and these so cabined, cribbed confined. For those who are not so well educated there really appears, as so often I have been told, no way to pass the time but by card playing or opium-smoking. And when one considers the large majority who do neither our need of admiration is great. In the middle class of society, very few cases except those begun through pain or grief have I encountered and as a rule the

pain is severe and caused by chronic disease. Among the so called women of pleasure where one would expect to find the opium habit widespread, and among whom my observations have been most extended I have rarely come in contact with it. This is accounted for partly by the fact that it does not pay, expediency like necessity being a strong motive power, partly because the mistresses or owners of those who are not independent will not permit any excessive use of the drug to their slaves. With many of this number the nearest relation into which they are brought with this fascinating drug is on the occasions when their spirits flag, the opium needles are heated and struck in various parts of the body. This is a stimulant to laughter, song and gaiety. That it would be a strong incentive to emotion no one can doubt. Then last but not least suicide is common after the calmness of despair has been attained. In the lower classes most are too poor to buy the drug, otherwise its use

would be vast. In this class even the would-be suicide cannot elect to leave this life by so pleasant and expensive a road as the opium one, but must choose the less costly way of cutting the throat or hanging. In the upper class in which it seems to me this habit is growing the crying need is for new thoughts. Something to do. A fuller life. How thankful then we should be for our mission press, which I believe is the largest in the world, and our Society for the Diffusion of Christian Knowledge, whose work done and doing is so good that it has lately received most graceful recognition from the Viceroy Tsung Tsi-tong, for it is to them we will owe so much for the literature that will give zest to the lives of the brave and true in this class, encouragement to the weaker and will aid, perhaps uplift, those who have fallen by the way side.

Yours truly,
MARIE HASLEP.



MEDICAL PROGRESS.

SATURATED SOLUTION OF POTASSIUM PERMANGANATE IN THE TREATMENT OF CHRONIC ULCER.

BY P. R. WAUGHOP, M.D.,

Interne at Boston City Hospital.

Some years ago we practically evidenced the value of a strong Solution of Permanganate spray in the treatment of a very serious outbreak of acute tonsillitis. Since then we have oftentimes used a hot strong solution in the spraying of ulcers. Resident here in China we soon become accustomed to ulcerated surfaces of endless variety and cause, and it will be, we are sure, a matter of interest to republish the following epitome of cases, meanwhile acknowledging our indebtedness to the *Boston Medical and Surgical Journal*.—ED.

Last summer, in the surgical out-patient department of the Boston City Hospital there were a number of very obstinate cases of chronic ulcer. Poultices of corrosive sublimate (1-1000), creoline (1-1000) and of LABARRAQUE'S solution were faithfully employed; as also strapping and the tin-plate method; but without success Iodoform, aristol and calomel powders were also unavailing.

Permission was then obtained to try the saturated solution of potassium permanganate on these cases. The results were extremely gratifying. One typical case is herewith submitted in full and a summary given of twenty-four others—ulcers, abscesses, old sinuses, etc.

CASE VIII. Ulcer just above left internal malleolus. Size of a quarter-dollar and one-quarter of an inch deep, the bottom being covered with a greenish slough.

This ulcer had been present for four years, with very little variation. It had

been treated at various times with poultices of corrosive sublimate (1-1000), the last time once every two days for three weeks. The poultices served merely to stop the sloughing without showing a tendency to heal.

Permanganate Treatment.—The slough was swabbed out, and the ulcer flooded for ten minutes with the permanganate solution (severe smarting being produced the first two minutes). It was next sponged dry and loosely packed with narrow strips of gauze soaked in the fluid. A heavy permanganate poultice (gauze three inches square, dripping-wet with the solution) was then applied, covered in with oiled paper, and bandaged as lightly as possible with cheese-cloth. This method was repeated every day for a week. On the eighth day the granulations were flush with the surface. Two days of subsequent treatment with eucalyptus vaseline was followed by the formation of a pellicle over the granulations. (Patient disappeared.)

CASE I. Gangrenous ulcer of leg. Size of dollar, and three-quarters of an inch deep. Corrosive three weeks, without effect. Permanganate heals in ten days.

CASE III. Old ulcer of leg. Superficial, two inches by one and one-half inches. Corrosive creoline, flax-seed, and boric acid ointment five weeks, without effect. Permanganate applied every other day, heals in ten days, that is, five applications were made.

CASE X. Ulcer of leg, two years' duration. Three inches in diameter by one-quarter of an inch deep. Bread-and-milk poultice two months, without effect. Permanganate, in three weeks, reduces ulcer to one-half the size. (Patient disappears).

CASE XI. Ulcer of leg, twelve years' duration. Size of quarter-dollar, one-half inch deep. Corrosive four months, without effect. Permanganate heals in six weeks. (Patient came only twice a week, and was on his feet constantly, doing heavy work).

CASE XII. Ulcer of leg. Three inches by one and one-quarter of an inch deep. Corrosive one week, without effect. Permanganate every other day for three weeks reduces to a superficial ulcer the size of a dime. (Patient disappears).

CASE XIII. Ulcer of leg. Size of dollar, and three-quarters of an inch deep. Very foul. Tar ointment six weeks, without effect. Permanganate heals in fourteen days.

CASE XV. Ulcer of leg. Two inches in diameter and one-eighth of an inch deep. Corrosive two months, without effect. Permanganate heals in seventeen days.

CASE XX. Ulcer of leg. One inch in diameter by half an inch deep. Linseed poultices, carbolized ointment five days. Action too sluggish. Hastened to a cure by permanganate in eleven days.

CASE XXIV. Ulcer of leg. Size of a half-dollar; one-quarter of an inch deep. Permanganate produces severe dermatitis. Heals slowly under iodoform ointment in nine weeks.

CASE XXVI. Ulcer of leg. Size of dollar, three-eighths of an inch deep. Corrosive two weeks, without effect. Permanganate, used every other day, heals in fifteen days.

CASE XXVII. Ulcer of leg. Tuberculous? Two and one-half by one and one-quarter inches. Corrosive seventeen days, without effect. Permanganate, at irregular intervals, heals in a month.

CASE XXXI. Ulcer of leg. Three by two by one and one-half inches. Corrosive two months, without effect. Permanganate heals in two months. (Patient came only twice a week and was constantly doing heavy work).

CASE XXXIII. Ulcer of leg. Two and one-half inches in diameter and three-fourths of an inch deep. Permanganate in fifteen days reduces to about one-half the original size. Then twenty days of flaxseed poultice. Ulcer remains stationary, and sloughs a few times. Then healed by permanganate in seventeen days.

CASE IV. Abscess of arm. Size of quarter-dollar, and one-quarter of an inch deep. Packed one week with iodoform gauze. Remains sluggish. Packed with permanganate gauze, (that is, strips of gauze wet with permanganate). Well in five days.

CASE XIV. Abscess of forearm. One-quarter of an inch in diameter by three-quarters of an inch deep. Packed with corrosive three days, without effect. Permanganate gauze cures in one week (five applications).

CASE XVI. Abscess of abdominal wall. One and one-half inches in diameter, superficial. Iodoform ointment six weeks, without effect. Permanganate gauze heals in fourteen days.

CASE XIX. Abscess of arm. Size of dime, superficial, very foul. Aristol ointment two weeks, without effect. Permanganate gauze heals in one week.

CASE XVII. Old suppurating sinuses along course of palmar tendons. Hydrogen peroxide and iodoform gauze ten weeks, without effect. Permanganate gauze (used every other day) heals in five weeks.

CASE XVIII. Suppurating gland of neck. Packed with iodoform gauze two weeks, without effect. Permanganate gauze heals in two weeks.

CASE XXIX. Cellulitis of thigh. Corrosive and iodoform gauze sixteen days, without effect. Permanganate heals in twenty-six days.

CASE V. Crushed fingers, sloughing. Iodoform gauze and creoline for one week. Too sluggish; little progress. Permanganate heals in ten days.

CASE XXII. Sloughing lacerated wound of hand—gunpowder. Iodoform gauze six weeks. Improvement steady, but too slow. Laceration reduced in ten days by permanganate, from size of dollar to complete disappearance.

CASE XXV. Crushed foot, sloughing. Eucalyptus vaseline three weeks, and black wash two weeks, without effect. Permanganate heals in sixteen days.

CASE XXI. Sloughing chancroids. Aristol ointment for twelve days, without effect. Permanganate heals in six days.

The above are fair examples. Several hundreds of these non-syphilitic cases were treated in this manner during July, August and September, 1893.

The main disadvantage is the pain, which may be very sharp from one to five minutes after application (sometimes twenty minutes, in the case of anal fistula). It then ceases altogether. Rarely, also, a dermatitis is produced.

If the granulations became over-stimulated, weak myrrh wash, lead and opium wash, or some one of the antiseptic powders, or bland ointments was substituted for permanganate until the indications ceased. Moreover, permanganate was usually supplanted by one of these dressings so soon as the ulcer was filled even with the surface, in the normal process of healing.

The patients mentioned above as "disappearing" were those who considered themselves cured, and felt too busy to make their final appearance at the hospital. The corrosive used in the above tests was always 1 to 1,000.

Very good results were obtained in a few cases of anal fistula which were slow to granulate after operation.

Saturated solution of oxalic acid was found to be the best reagent for removing the stain from the hands.

HERNIA IN CHILDREN.

WIRT *International Medical Magazine*, (February, 1894), in an excellent contribu-

tion on hernia, gives the following table of the relative frequency of the different forms of hernia as found in 19,756 cases treated in the hospital for Ruptured and Crippled, New York City:—

	No. Cases.	Male.	Female.	Under 14.	Right.	Left.	Double.
Inguinal . .	10,884	14,994	1870	4348	7806	4375	4636
Umbilical . .	1,488	669	919	789
Femoral . .	1,135	418	717	26	700	379	56
Ventral . .	269	95	174	13
Total . .	19,756	16,076	3680	5176	8506	4754	..

He classifies treatment under three heads: 1. General treatment; 2. Mechanical support; 3. Operative measures.

General treatment is directed toward the relief of the conditions causing the hernia, as vomiting, coughing, calculus, a rectal polypus, or chronic diarrhœa, or when necessary, to tonic treatment, out-door exercise, etc.

Mechanical treatment as given in the hospital for Ruptured and Crippled, consists in using a steel spring truss for all reducible cases except umbilical and ventral. The Knight truss is used most, and is efficient and cheap. In cases difficult to hold the Hood truss is employed, and in the worst cases a combination of the Knight and Hood.

Umbilical herniæ are treated by means of a wooden button held in place by rubber adhesive plaster.

Operation for hernia requires strict antiseptic precautions, great care in dissecting out the sac and handling of the spermatic cord. The sac should be tied off well down in the wound, the external portion removed, and the stump returned into the abdominal cavity. The wound should be closed and dressed antiseptically, and over all a plaster-of-Paris spica should be applied from ankle to umbilicus. The casing should be removed in eight days and the wound then dressed.

OPERATIVE TREATMENT FOR STONE IN
THE BLADDER.

BRIGGS (*International Medical Magazine*, February, 1894), contributes a most interesting article on this subject, giving his personal experience with two hundred and eighty-four cases of stone, and discussing the various methods of operation.

He performed lithotripsy on five patients, all of whom recovered, but were very impatient over the amount of time required for treatment. He then tried litholapaxy on ten adult cases; in two death resulted from renal complications. He selects this method of operation under four conditions: 1. Adult patients; 2. Capacious and tolerant urethra; 3. Small or medium-sized stone; or, if large, of soft consistence; 4. Bladder capacious and free from severe and persistent inflammation.

He prefers lithotomy in children, and has performed the operation on seventy-six children under sixteen years of age, and all recovered but one.

The supra-pubic operation he performed on seven cases for the removal of very large, hard calculi; resulting in recovery in five.

Forty-four operations by the bilateral method resulted in ten deaths. He then chose a modification of the median operation suggested by Civiale in 1829, and called by him the medio-bilateral method. He has performed that operation one hundred and seventy-one times, with a result of one hundred and sixty-seven recoveries and four deaths, three of the number not being attributable to the operation.

The advantages of the operation given are briefly: 1. It opens up the shortest and most direct route to the bladder; 2. It divides parts of the least importance; 3. It is almost a bloodless operation; 4. It affords sufficiently capacious passage for the removal of any calculus; 5. It reduces the death rate to the minimum.

In conclusion, BRIGGS makes the following statements: "1. No method of opera-

tion is adapted to all cases; 2. Thorough preparatory treatment is essential to success; 3. Litholapaxy is the operation when the patient is an adult with a capacious and tolerant urethra, with a bladder free from severe chronic cystitis, and with a small or medium-sized stone, or, if large, of soft consistence; 4. The supra-pubic is the best operation for large and hard calculi; 5. The medio-bilateral should be chosen in all other conditions, because it is the easiest, safest, and best."

QUININE IN MALARIA.

BINZ (*Centralbl. f. d. med. Wiss.*, 1894, No. 2.) reviews our present knowledge of the curative action of quinine in malaria. From his experiments—about one thousand eight hundred and sixty seven—he concluded its curative action in this disease was due not to any essential action, as previously supposed, on the nervous system or on the circulation, but to a direct action on the cause of the disease; that quinine was far less a poison for the cells of the human body than for the cause of disease. This was probably some low form of organism, and by removal of which, through the action of quinine, the intermittent crises—swelling of the spleen, and the malarial anemia, etc.—also disappeared. In 1880, LAVERN discovered the ameba of malaria. This was found to be affected by quinine, just as the experiments of BINZ had shown that the larger infusoria of vegetable juice were by the same drug. It is only when ague gets well without quinine that, according to MANNABERG, phagocytosis can be considered as playing any part, for phagocytosis is hindered by the taking of quinine. The explanation why quinine fails in some forms of ague is that the parasites remain in the blood unaffected by the drug, and even in some such cases, according to BACCELLI, the parasites may be affected if the drug be injected directly into a vein, a good result being sometimes possible by this method

when administration of the drug by the mouth has failed.—*British Medical Journal.*

THE TREATMENT OF PULMONARY TUBERCULOSIS WITH PROFESSOR KOCH'S TUBERCULIN.

KARL VON RUCK (*International Medical Magazine*, February, 1894), refers to his earlier article, in which he reported (*Therapeutic Gazette*, June 15, 1891) twenty-five cases of pulmonary tuberculosis treated with KOCH's tuberculin. He then gives the present condition of these patients.

Class A, of five cases reported, all recovered, or one hundred per cent. of recoveries.

Class B, of seven cases reported, six made a final recovery, and one improved, making eight-six per cent. of recoveries.

Class C, thirteen cases were reported, six of which have improved, while seven have died.

After giving some precautions in regard to selection of patients and making of observations while they are under treatment, he gives his method of administration of tuberculin as follows:—

"Beginning with one-twentieth of a milligramme as a trial dose, to which I have never seen a response, the next dose is one-tenth of a milligramme, and the increase is thereafter one-tenth until one whole milligramme is reached; then I increase one-fifth of a milligramme until two milligrammes are reached; next one-half milligramme up to ten; from ten to twenty milligrammes I increase two and one-half milligrammes, and thereafter five milligrammes at a time."

He has treated one hundred patients with between six and seven thousand injections, and he therefore concludes that tuberculin is no longer on trial as an experiment, but on the contrary its effects are as reliable and as uniform as one could expect them to be under the great variety of individual conditions, such as constitution, stage of

the disease, organs involved, or complications present.

LAVAGE IN CHOLERA.

Dr. I. F. SHARR, of Kherson, after trying the usual remedies for cholera, adopted the following: The patient was made to drink six or eight glasses of hot water containing three drops of hydrochloric acid in each tumblerful. After taking the water, the patient was made to expel it by pressure upon the stomach, inducing vomiting. After the water had been expelled, the same process was repeated, if necessary, two or three times, at intervals of two or three hours. At the same time large enemata were used, consisting of one gallon of a two and one half per cent solution of tannin. The water was used as hot as possible. If tannin could not be obtained, water alone was used. The enema was repeated every two or three hours. A hot bath was used when there was a tendency to collapse. The patients were given freely of lemonade made with hydrochloric acid, ten drops to the tumblerful. A little lemonade was administered every ten minutes. The results were very satisfactory.

THE USE OF CARBOLIC ACID IN FULL STRENGTH IN SURGERY.

Dr. B. F. GARDNER has been using (*N. Y. Med. Jour.*) carbolic acid in full strength in surgery. After an operation and after all bleeding vessels are ligated, he applies with a sponge to the cut surface carbolic acid crystals dissolved in just enough of water to make a solution. The surface turns immediately white and afterwards the excess of the acid is washed off with sterilized water. He claims for this method of treatment that there is systemic absorption of the acid, and hence no danger and no shock. That it acts as a local anæsthetic and there is not as much after-pain after operations, and that it is a hæmostatic acting upon the capillary vessels. The turning of the wound

surface white is due, probably to the coagulation of the albumen of the tissues and fluids of the wound surface and not that the acid has any necrotic effect. That it does not produce a true destruction of tissue may be inferred that after a large breast or thigh amputation, there is primary union and no suppuration. In its use in hydrocele $\frac{1}{2}$ drachm or more is injected in tunica vaginalis and resolution without suppuration ensues.

THE TREATMENT OF SEA-SICKNESS.

DR. CHARTERIS of Glasgow reported in 1893 that favorable results had been obtained from the use of chlorobrom in sea-sickness. He now states, as his conclusion from a study of three hundred cases, that if suitably administered it has a decided prophylactic value for both long and short voyages.

"To ensure success in this treatment, it is essential that the *primæ viæ* should be freely moved for two successive nights before embarkation, and that for the first two or three days of the voyage the traveller should eat 'spare and dry,' avoiding above all things soup, sweets and pastry. A full dose of chlorobrom (one tablespoonful and a half for a male and one tablespoonful for a female) must be taken for the first three nights of the voyage. After this period a further use of the solution will probably be found to be unnecessary and all restrictions of diet may be removed. Idiosyncrasis of the patient may prevent in very rough weather absolute freedom from sea-sickness, but on the evidence produced there seems to be every probability that in the majority of cases immunity may be obtained.

"In short voyages, when the steamer leaves, perhaps 10 p.m., the passenger should immediately retire to rest, and take one of the doses mentioned. In a shorter passage across the Channel a teaspoonful should be taken before going on board. By following these directions immunity from sea-sickness is obtained in the great majority of cases,

but if they be not followed it is to be remembered that chlorobrom has no effect in arresting an outburst of vomiting. If it is given in a teaspoonful dose every ten minutes until a tablespoonful and a half or a tablespoonful have been taken, it will almost invariably check retching and depression."

PREVENTION OF PITTING IN SMALL-POX.

DR. LEWENTANER of Constantinople prevents (*Wiener Klin. Woch.*—*Pittsburgh Med. Rev.*) pitting in small-pox by the following method. The entire head and face, except the eyes and the neck are covered with plaster consisting of 3 parts of carbolic acid and 50 parts each of olive oil and starch. The body is covered over with a mixture of 3 parts of salicylic acid, 30 parts of starch and 70 parts of olive oil. The internal treatment consisted in giving quinine in acid solution.

THE USE OF COFFEE IN THE TREATMENT OF ASIATIC CHOLERA.

Prof. D. P. DUBELIAR of Moscow recommends (*Vratch* No. 42, 1893) the infusion of strong black coffee, administered as hot as could be taken, to the extent of two or three tumblerfuls daily in the treatment of Asiatic cholera and states that when so administered coffee exercises a most decided beneficial action on cholera patients. Even in very severe cases vomiting ceases, the patient's consciousness brightens, the pulse becomes stronger and the secretion of urine increases. The writer emphatically suggests a fair trial of this simple and cheap remedy.

THE SULPHUR INDUSTRY OF JAPAN

Sulphur, called in Japanese "iwo" or "yuwo," is found as a glossy product of sublimation, often covering the crater walls, crevices, and clefts of active and extinct volcanoes throughout the country. By far the greatest amount of Japanese sulphur is formed by decomposition of the

sulphuretted hydrogen of the very numerous solfataras.

The export trade in this article has grown rapidly since the opening of the country to foreign commerce. In the year 1868, the earliest date for which reliable customs statistics are available, there were exported 131 tons, valued at \$6,479.

In February, 1893, there were eighty-four mines in operation, of which only thirteen produced annually more than 100 tons each.

Ninety-five other mines were located and under trial excavation by government permit. No official estimate has been made of the quantity of sulphur still available. The total product of the country during 1891 (that being the latest year for which reports are published) was 44,505 tons, of which 21,923 tons were refined sulphur.—W. D. TILLOTSON, in *Consular Reports* for March.

THE TREATMENT OF INFANTILE CONVULSIONS.

In the *Lyon Médical* for April 8th we find a *résumé* of an article, by Dr. A. F. PLICQUE, which appeared in the *Gazette Médicale de Paris* for March 24th. Whatever may be the cause of the convulsions, says the author, which may be investigated subsequently, action must be taken at once. It is well to use inhalations of ether as an antispasmodic, since that drug can almost always be obtained without loss of time. The bowels should be emptied if necessary by means of an enema containing salt (a tablespoonful of salt to a glass of warm water). This enema is to be preferred to those of more complicated constitution, because they require more time for their preparation. To keep up the antispasmodic action of the ether, Dr. J. SIMON advises an enema consisting of twenty drops of tincture of musk, five grains of chloral, and two ounces of warm water. This is intended for a child from three to six months old. The dose of chloral should be not more than four grains for a child

under that age, and may be increased to fifteen grains for a child a year old. The following is a suitable antispasmodic draught: Potassium bromide, fifteen grains; tincture of musk, twenty drops; syrup of ether, a drachm and a half to two drachms; syrup of orange flowers, an ounce; linden water, four ounces. Until the child has passed water abundantly there is danger of further convulsions, and he should be watched closely.

A NEW DIAGNOSTIC SIGN IN TYPHOID FEVER.

In every one of the many patients suffering from typhoid which he had occasion to observe during the two great epidemics that occurred in Odessa, Dr. FILPOVITCH invariably found a symptom as yet undescribed which he calls the palmo-plantar sign. It consists in a peculiar callous appearance and a yellowish, orange, or even saffron-like hue of all the prominent parts of the palmar and plantar surfaces. Another Russian physician, Dr. SKIBNEVSKY, has observed this sign in all the patients he attended during an epidemic which took place in the government of Moscow. This symptom is said to disappear readily when the patient becomes convalescent.—Rev. DE THER. *Medico-Chirurg.*, Nov. 15, 1893.

CONTAGION A REPROACH.

The continued prevalence of zymotic diseases in any community is an opprobrium. Cases of diphtheria, scarlet fever, measles, etc., do not occur sporadically. When imported to a locality they can be limited or entirely rooted out by the prompt applications of the improved sanitary measures of modern civilization. The efficiency of these safeguards can always be relied upon in preventing the spread of contagious and infectious diseases. They are *isolation, quarantine, disinfection, sanitation*. Owing to the dread of small-pox the

public demands that the severest measures be taken to prevent its spread. Modern sanitary science demands the same precaution on the part of health authorities with reference to diphtheria, scarlet fever and other communicable diseases. Hence every city should have a contagious disease hospital, a disinfecting plant, and other necessary appliances for dealing with contagion and infection.—*Popular Health Magazine*.

DO COFFEE AND TEA FACILITATE
DIGESTION ?

The celebrated chemist SCHULZ-SCHULZENSTEIN prepared from the fresh mucous membrane of a pig an extract which approached very nearly in character to the gastric juice, and first tested it with the albumen of a boiled egg. The operation was completed in eight hours, and 94 per cent. of the substance converted into digested albumen. He then submitted a decoction of tea and coffee, severally, to the action of the same preparation. In the case of the coffee 61 per cent., and in the case of tea 66 per cent., of the albuminous contents was digested, thus confirming the observation frequently made by physicians that boiling materially prejudices the digestibility of albuminous substances.

Treating more particularly of coffee, he observes that it contains several active principles, each of which exercises an influence on the system. The most important of these are : First—Caffeine, which raises the activity of the heart, operating in small quantities as a wholesome stimulus, but as a poison when taken in excess. Second—An aromatic substance, which operates principally on the nerves, acting in moderate quantity as an agreeable stimulus; to this are attributable the phantasies so frequently experienced as a result of coffee-drinking. Third—The coffee bean contains tannin, to which it owes its bitter taste, and this, as is well known, enters into combinations with

albumen which materially prejudice its digestibility. These three principal substances vary very much with the method of preparation. If the coffee is simply infused in water at the boiling-point, and allowed to cool at once, we get little caffeine, a great deal of the aroma, and scarcely a trace of tannin. If we allow the coffee to boil for a time, the aroma is dissipated, passing off with the steam; we get more caffeine, and the longer it is boiled the more tannin is dissolved out.

These experiments confirm the view generally expressed by physicians that coffee long boiled prejudices digestion, while a simple infusion facilitates it; but its beneficial action in the latter case is now shown to be due, not to direct chemical action on the albumen present, but indirectly to its action on the nerves of the stomach, promoting the secretion of gastric juice. In other words, its action is physiological, not chemical.

Turning now to tea, he finds its constituents very nearly similar. The tea leaves also contain caffeine (called, also, theine) aromatic substances, and tannin. Consequently in tea, as in coffee, the properties of the beverage depend very much on whether it is an infusion or a decoction.

The problem is very simple. The traveler on the march will find himself benefited most by the caffeine, and to secure this the coffee must be brought to, and maintained for a few minutes at, the boiling-point. But to take boiled coffee after a full meal impedes digestion and heightens the heart's action unduly. On the other hand, an infusion of tea or coffee, taken at such times, facilitates digestion and exerts a wholesome and exhilarating action on the nervous system. Long boiling, or stewing near the boil, of either tea or coffee, brings out all the tannin, which is always prejudicial to digestion. As a consequence, the practice of keeping tea or coffee hot, as at restaurants, is a pernicious one.—*Food and Sanitation*.

A REMARKABLE RECORD IN SANITATION.

The *Sanitary Record* observes that very interesting statistics have been lately furnished by Mr. MORSE respecting the disposal of the vast quantity of refuse daily dealt with at the Chicago exhibition. The one main fact was that all the garbage and sludge resulting from the presence of 27,250,000 men, was destroyed in 6 months without any inconvenience or outbreak of disease. The liquid sewage was forced by an English apparatus into large tanks, where it was precipitated by chemicals and the effluent run off into the lake, and the residuum pumped into presses which delivered it in solid cakes for disposal. The waste food products and the refuse and litter of all kinds were cremated in a special furnace. This was done with such ease and speed that the bodies of 4 horses, 2 camels, cows, deer, elk, pigs, dogs, etc., were destroyed in a few minutes at a charge of about 3 shillings per ton, the disposal of the liquid sewage costing considerably more.

SOLUTION AGAINST INSECT BITES.

The following formula is published by the *Jour. de Pharm. et de Chim.* Ammonia water, 3 gm.; collodion, 1 gm.; and salicylic acid, 10 cgm. One drop to be applied to each spot affected.

WATER PURIFICATION BY THE ALUM METHOD.

It has long been known that the addition of small quantities of alum to impure water has the effect to cause the precipitation of its impurities, and this method has been used, sometimes on a large scale, as a means of purifying water. MAX TEICH, of the Institute of Hygiene of Vienna, has recently made a study of the value of this method, and finds that while the method offers no objection from a sanitary standpoint, and is capable of killing cholera germs, typhoid fever germs are not materially affected by it, and treatment of the

water for at least twenty-four hours is necessary to destroy the germs of cholera.

TREATMENT OF BURNS IN CHILDREN.

WERTHEIMER treats burns in children by first thoroughly washing the injured part with lukewarm boric-acid solution. Over this is placed absorbent gauze which has been soaked in lime-water and linseed oil, each 50 parts; thymol, .05 to .10 part. This is placed over the raw surface in the form of broad strips, is covered in with absorbent cotton, and is held in place by a moderately firm gauze bandage. The dressing should be renewed every day. By the end of the second week the following ointment is employed:—

R	Bismuth subnitrate,	9 parts.
	Boric acid,	4.5 "
	Lanolin,	70 "
	Olive oil,	20 "

This is applied on absorbent gauze strips as was the first mixture. Internally, stimulants are administered.—*Archiv f. Dermatologie u. Syphilis.*

HOW OUGHT WE TO SLEEP?

Dr. REMONDINO, says the *Sanitary Record*, seems to have solved this problem and he tells us that the Chinese know the best way we ought to sleep. It is strange that highly educated citizens should know less of the laws imposed upon us by healthy natural sleep, than the heathen Chinese. It is, however, remarkable that the latter enjoy better health than the more favoured races of the old and new world. The pillows and the bolster of feathers, down, horse-hair or moss as used, receive all the perspiration from the head and from the upper part of the body during the entire night. And even, if aired properly during the day are not thoroughly purified. Moreover the same bolsters and pillows are in constant use for years, only the pillow-case and the sheet being changed and although all may appear clean to the eye, few hardly ima-

gine what lies beneath the surface. The Chinese are more practical in this matter; their bed being nothing more than a hollow or grooved block of wood lacquered or varnished. It is light and can be easily cleaned and aired. The head of the sleeper is on a raised part, corresponding to our pillow and it differs in size according to the figure of each individual. This raised part is stuffed with a small linen cushion which by the poor, is re-covered during the night with a thick layer of a special paper which is very often renewed, and without which no journey is ever undertaken. The Japanese have almost an identical arrangement. And the semi-barbarous tribes of Central Asia use a hard board of wood to rest the head instead of the pillow, a place being reserved on this board for the infant who never sleeps in its mother's bed. Whatever may be the fashion adopted, the pillows ought never to raise the shoulders and the head only should be supported. This

position prevents insomnia to a great extent and likewise accelerates the functions of the digestive organs.

REMOVAL OF EXCESSIVE GRANULATIONS.

Doctor KEEN says the best remedy for removal of "proud flesh" in a healing wound is chromic acid, ten grains to the ounce, applied two or three times.

EPISTAXIS.

The fluid extract of the *Geranium maculatum* will control nose-bleed, bleeding from a tooth, or other local hæmorrhages, if applied directly.—*Medical Times*.

Urticaria, a disease attended by the generation of an excessive amount of acid in the alimentary tube, is almost unfailingly cured by ten drops of nitro-muriatic acid in a wineglassful of water one hour before eating.

NOTES AND ITEMS.

Mr. Kingsmill writing to the *Shanghai Mercury* 30th June, gives an admirably exhaustive and graphic account of the *Natural History of the North China Plague*. We avail ourselves of the courteous permission of making the following extracts: E. C. BABER gives the most exhaustive report of the disease as it appears in the valley of the Salween. Approaching the river he discovered the valley was uninhabitable during the summer months on account of the malaria, the natives retiring as soon as the fields are planted, and only returning in autumn to reap the crops. To the question of what becomes of the travellers, the answer was given that very few pass during the hot season, and they hurried through before sunrise. MARCO POLO's remark is also borne out by the official topography which, describing this spot Tu-shu Lao-ch'eng, says, the "Lu River anciently called Hu Hu is met with 20 miles South of Yung-ch'ang. The mountains on both sides are exceedingly steep, and its exhalations are so poisonous that it is impassable during summer and autumn." BABER (*Notes on the Route of Mr. GROSVENOR'S Mission*, p. 178) describes this valley of death. "The air of the place was curiously hot; the thermometer, well shaded, stood at 96°, but irregular blasts were wafted from the south-east which scorched like the breath of a furnace. Walled in by precipitous mountains, and wooded with clumps of exceptionally fine trees, the unhappy valley is picturesque in the highest degree. Small rounded hills are dotted about its floor; the rice fields cover a great space, but very few, probably not a tenth part, are now under cultivation. It is by far the lowest depression in Western Yunnan, and runs nearly due north and south

as far as the eye can reach, with an average breadth of about two miles. Looking up that low avenue of precipices, one cannot suppress a certain sentiment of solemnity." Such is the description of what we may call the *Plague Metropolis*. Of the disease itself BABER has many things to say.

"Its approach is indicated by the eruption of one or more minute red pustules, generally in the arm-pits, but occasionally in other glandular regions. If several pustules appear, the disease is not considered so hopeless as when there are few. The sufferer is soon seized with extreme weakness, followed in a few hours by agonising aches in every part of the body; delirium shortly ensues, and in nine cases out of ten the result is fatal.

"It often happens that the patient suddenly, to all appearance, recovers, leaves his bed, and affirms that, beyond a slight sensation of weakness, he feels thoroughly convalescent. This is invariably a fatal sign; in about two hours the aches return, and the sufferer dies.

"True recovery is always very gradual. This is the account given us by a French missionary, who has spent half a life-time in Yunnan. The native version includes all the above facts, but involves them in a cloud of superstitious accessories; for instance, all parts of the sick-room are occupied by devils; even the tables and mattresses writhe about and utter voices, and offer intelligible replies to any one who questions them.

"Few, however, venture into the chamber. The missionary assured me that the patient is, in most cases, deserted like a leper, for fear of contagion. If an elder member of the family is attacked, the best attention he receives is to be placed in a

solitary room, with a vessel of water by his side. The door is secured, and a pole laid near it, with which twice a day the anxious relatives, cautiously peering in, poke and prod the sick person, to discover if he retains any symptoms of life.

"Père FENOUIL (there is no objection to his name being mentioned) had himself witnessed many cases of the disease, and lived in infected towns. He attributes his own safety to the precautions he took of fumigating his premises, and keeping charcoal braziers constantly burning, to such an extent, indeed, that his house on one occasion actually took fire. He states that not only human beings, but domestic animals, and even rats are attacked by the pestilence.

"Its approach may often be known from the extraordinary movements of the rats, who leave their holes and crevices, and issue on to the floors without a trace of their accustomed timidity, springing continually upwards from their hind legs as if they were trying to jump out of something. The rats fall dead, and then comes the turn of the poultry; after the poultry have succumbed, pigs, goats, ponies, and oxen successively die off."

In 1882, the disease was epidemic in parts of Kwangtung, and Dr. LOWRY, then stationed at Pakhoi in the service of the Imperial Maritime Customs, had a good opportunity of investigating it. In the Medical Reports (No. 24, April-September, 1882) he tells us, it commenced at the end of March and lasted for three months till the latter part of June; at Lien-chow, some 12 miles distant, a similar outbreak raged with more or less severity till August. He speaks of it as a comparatively new disease, but learns that a few cases occurred every year, agreeing thus with its ordinary sporadic tendency. Out of a population of about 25,000 he calculated that the deaths amounted to between 400 and 500. Its virulence he attributed, and

doubtless with reason, to the peculiarly filthy condition of the town. Here, as elsewhere, the disease had first attacked the rats, who came out of their holes and died on the floors of the houses. Buboos and inflammations of the glands generally were a marked symptom, so that he had no difficulty in diagnosing the disease. The principal symptoms were, high fever, glandular swellings and buboes, sallow skin, heavy odour from breath, delirium, general drowsiness and coma. Filth and want of ventilation accompanied by high temperature were the predisposing causes. He described the disease as a specific contagious fever of short duration, accompanied by glandular swellings and very fatal. In some respects it most resembled typhus, but had also some relation with dengue, while in Persia, on the authority of Dr. ARMAND, many patients who recovered from a similar disease which occurred there synchronously, were marked with indurated anthrax. In Pakhoi the disease seems to have become endemic, the average annual death rate amounting to from 40 to 60. From February last to the middle of May, the severity of the disease has according to Mr. FRASER, the British Consul, in common with other districts, immensely increased, the deaths up to the middle of the latter month amounting to from 300 to 400.

Dr. WHITNEY, who by the way we heartily welcome amongst us again, writes a few lines from 'Pagoda Anchorage,' Foo-chow, supplementing the very interesting article we now publish from his pen. He says: "It is time we considered this matter and see if something cannot be done to stop pauperizing the Chinese who are able to pay, and there are but few who could pay something if they were required to." Dr. WHITNEY will, we are sure, be much interested to note how thoroughly this matter has been dealt with in our present number. Our own views are, that we cannot

conceive the utility of any suggestion of sweeping association legislation in this respect. A system which has worked so well in Dr. WENYON'S admirably managed hospital at Wenchow is totally inapplicable—our personal knowledge tells us, to Dr. DOUTHWAITE'S equally admirably managed establishments in Chefoo. We ourselves have always endeavoured to insist upon an adequate fee from those who we deem are in a position to pay one—the majority of the people around us in the country are poor, and it is oftentimes a simple charity to forego the few cash expected of them by our rules. All the restrictions in force in our home lands are, judging from the papers, of little avail; here it is evident that the two conflicting systems must under the varying conditions go hand in hand, and the whole question resolve itself into one of individual discretion on the part of the individual medical missionary. . . .

A letter reaches us from Kirin—date of 2nd June. Dr. GREIG (may he be blessed with all the success he so richly deserves) gives us one interesting little item—the fact of his coming to Shanghai for the purpose of meeting Mrs. GREIG—the few remaining lines of his letter mainly touch upon matters financial, in the which our friend the Rev. G. F. FITCH of the Presbyterian Mission Press, Shanghai, is the more immediately concerned. May we, in this respect, impress it on our friends that monies sent us in future, must be passed on to our private dividend equalisation account, as we have nothing whatever to do with the funds of the Association.

Dr. JOHN CROSS, who it gives us pleasure to welcome to our Association ranks, writes from Amoy telling us of extending his work to a large city. The name is somewhat illegible, and moreover would be difficult to pronounce. We are sure we all wish Dr. CROSS every possible success. Our old friend Dr. "JAS. B. NEAL" in the course of a long genial letter "wants to know" if we have a library and museum belonging to

the Association . . . We are prepared to admit, that we view this apparently innocent question somewhat askance. Is there, we ask, any intent, on our heretofore friend's part, to introduce any element which may in some nasty undeveloped manner, personally accentuate the existing temperature for us. If our name was some years since officially connected with some such institution as Dr. NEAL may hint at—we consider that as we then of the Secretariate—our secretary has assumed all responsibilities, and *now* ought to be called upon for an explanation. In fine we would rather proceed to touch upon other parts of our friend's letter, which are really interesting. We quote :—

Perhaps you will be interested in the accompanying statistics of our medical work in Chi-nan-fu which is growing from year to year and especially developing since the opening of our hospital in the east suburb in 1892. Dr. VAN SCHOICK had charge from the opening of the hospital in August 1892 until my return last fall when he went to Chi-ning-chow. We have several new hospital buildings under roof and hope by the first of May to have accommodations for thirty in-patients. It seems very nice indeed to be back and well in harness again. I have enjoyed the work of the past five months since my return very much.

Statistics of Chi-nan-fu Medical Work.

1893.		
Attendance at City Dispensary	New Cases	6,788
	Old	6,798
" " Suburb "	New	2,930
	Old	2,963
Hospital Patients		121
Total for City, Suburb and Hospital		19,595
1892.		
Total of City and Suburb (Sub. only 4 mos.)		14,315
1891.		
Total of City (no Suburb work)		11,010

J. B. N.

Dr. G. S. WALTON characteristically regards it as an indication on the part of Providence that he should not write for us this time as he has mislaid our letter—dear dear

how indications in this respect are misread. We quote from his kindly letter from Hio-kau date May 1st as it must apply to others: Having at present no domestic tailor, private secretary, no dispenser, and no competent assistant, and beginning to feel the diaphoretic effect of the Confucian Analects, I beg, Sir, to be excused. But I will keep your kind wish in mind, and ask you not to be surprised if I send you some thing some time without being asked.

PHYSIOLOGY OF WEARINESS.

In delivering the Rede Lecture at Cambridge, London, Professor MICHAEL FOSTER chose as his theme "Weariness." Those acquainted with Professor FOSTER's works and the combined breadth and caution of his generalizations will know that no one could have been selected who was more likely to do justice to a subject which has a personal interest for every worker. Commencing with a simple muscular act, the lecturer analyzed the physiological phenomena of weariness in such and in the higher work of mental operations. He clearly emphasized the two prime factors in the production of exhaustion—too rapid expenditure of capital or force, and the accumulation of the products of activity in the working organ. After proving that "the nervous system was a candle which could not profitably be burned at both ends at once," Professor FOSTER went on to show that endurance depended largely upon "blood adequately pure," and that the readiness with which the "internal scavengers freed blood from the poison which the muscles (and other active organs) poured into it" was proportionate to the staying power of the worker. "The hunted hare died, not because he was choked for want of breath, not because his heart stood still, its store of energy having given out, but because a poisoned blood poisoned his brain and his whole body." The "humbler help-mates" of the active organism—that is,

the nutritive, excretory, and metabolic functions of the body—were of the highest importance to the enduring activity of the higher executive mechanism. Professor FOSTER touched upon, but did not treat, the subject of "inertia or laziness," and we trust that he will on some future occasion afford us the benefit of his views upon this phase of the subject. That "unwillingness to stir" greatly increases the work of compulsory stirring, is matter of constant observation, and the "labor of love," though greater than that of compulsion, may be borne with less effort and with much weariness than the latter.—*London Lancet.*

One of the most touching incidents associated with the resignation of Mr. GLADSTONE was his last appearance as Prime Minister in his old place at the Sunday morning service at the Chapel Royal, Westminster. It is stated that he seemed to be perfectly able, with the aid of his glasses, to read the anthem and the hymn, and to follow them closely even in the subdued light of the chapel. But he seemed to hear with difficulty parts of the service. Mr. GLADSTONE stood throughout, his face covered with one hand. To those who looked on, there was an indescribable pathos in the noble old figure standing alone, his head slightly bent toward the altar. The hymn was the well-known

"O Paradise, O Paradise,

Who doth not crave for rest?"

and might almost have been selected as expressing the sentiment of the occasion.

LAUGH.

Learn to laugh. A good laugh is better than medicine. Learn how to tell a story. A well-told story is as welcome as a sun-beam in a sick room. Learn to keep your own troubles to yourself. The world is too busy to care for your ills and sorrows. Learn to stop croaking. If you cannot see any good in the world, keep the bad to yourself. Learn to hide your pains and

aches under a pleasant smile. No one cares to hear whether you have the earache, headache, or rheumatism. Don't cry. Tears do well enough in novels, but they are out of place in real life. Learn to meet your friends with a smile. The good humored man or woman is always welcome, but the dyspeptic or hypochondriac is not wanted anywhere, and is a nuisance as well. — *Family Doctor.*

An advertisement recently appeared in a New York daily, offering \$5,000 to any man who would submit to an experimental surgical operation involving some risk. One hundred and forty-two answers were received. Two physicians in Ecuador are the advertisers, who wish to establish a gastric fistula, and repeat the observations made by BEAUMONT on St. MARTIN.

Take a piece of rubber. This substance has an inherent quality of elasticity, or resiliency, if you please. You may pull it or stretch it any number of times to a certain degree and it will return to its original length. You may even stretch it with violence a few hours and it will still return to its original length, although we cannot say positively that its condition is intact. But if you pull it beyond its capacity to hold together it will snap asunder and no power with which we are acquainted will return it to its original condition or to any degree of usefulness. Its elasticity, or resiliency as well as integrity are destroyed. How often do we see an analogous condition of things all around us in the business world! Man is so constituted physically, mentally and morally that exercise of all his faculties to a certain extent is good for him, in fact necessary for the maintenance of health, according to the individual; but if undue strain is put upon him in any of these directions, in the great majority of cases he is sure to break, and straightway we hear of nervous prostration, mental wreck, insanity, moral depravity

and a host of similar expressions.—*The New York Medical Examiner. Physical Education.*

HOW TO GO TO SLEEP.

Begin at your toes to relax, loosen all your joints and muscles, unbind your fingers, shake your wrists loose, take the curve and strain out of your neck, go all to pieces, in fact, and see how the day's fatigue seems to slip off from you, and the gentle mantle of rest and oblivion enfolds you like a garment.—*Medical Brief.—Ib.*

On Saturday 21st April the medical missionariss residing in Shanghai, and several who were visiting that port, met together at the house of Dr. E. REIFSNYDER, for prayer and the discussion of the spiritual aspect of their work.

The time thus spent together was felt to be most profitable and encouraging, and Dr. DOUTHWAITE who presided, proposed that a similar meeting be held once every three months. This was agreed to, but no definite dates could be fixed.

Dr. DOUTHWAITE announced that he had written to all the officers of the Medical Missionary Association suggesting that a general meeting of all the members be convened to meet in some central place early in 1895, but as the suggestion did not meet with sufficient approval to guarantee its being successfully carried out, he had thought it better to let the matter drop for the present.

A scientific paper says that the highest death rates from Bright's disease are in Shanghai, 150 per 10,000; Frankfort, 130, and Amsterdam, 120.

Take care of your health. Imagine HERCULES as oarsman in a rotten boat; what can he do there but by the very force of his stroke expedite the ruin of his craft?—TYNDALL.

We have been requested to announce the following interesting fact: At the time of

writing matters are somewhat mixed in Seoul, yet we wish long life and every prosperity to the Medical Association of Seoul. "A medical society has been formed in Korea called the Medical Association of Seoul with the following officers:—O. R. AVISON, M.D., President; JOHN B. BUSTEED, M.D., Secretary. Meetings are held the first Friday of the month."

It is with a deep sense of sorrow we learn of the death of our friend Dr. ROBERTS of Tientsin. We take the following extract from the Tientsin correspondent of the *North-China Daily News*:—

Death of Dr. Roberts.

A great loss has befallen Tientsin in the death of Dr. F. C. ROBERTS, which occurred at about 2.30 on Wednesday morning. He was the successor of the late Dr. MACKENZIE in the London Mission Hospital. As usual, he was in attendance in dispensary and hospital up to Tuesday, 29th May, and only took to his bed the following day. His disease was difficult to classify because of its presenting features of the different types of fever, bilious, remittent and typhus. The attack was sudden and severe, and refused to yield to the combined wisdom of high medical skill. It early became evident that he had little recuperative power, that overwork, in large measure unconsciously to himself, had so undermined his system, that recovery was exceedingly doubtful. He was a man having a high sense of duty, and very conscientious in its performance down to the minor details of his work. To these he gave most careful personal attention: as a physician who knew well his work and his careful method said, "doing the work of four men."

His Work

As was said at his grave, "A great and a good man has been taken from us." He was loved by all who knew him, and among the Chinese has won a place only second to that of the founder of the hospital. For

the last few years he has had an associate, Dr. G. P. SMITH, who was absent on account of his own health and returns to-day to find himself alone in a work which is certainly sufficient for the strength of three ordinary mortals. It is a question of no ordinary moment how this important work is to be carried on with only one man, and it is to be hoped that a man may soon be sent to assist in this enlarging field of usefulness.

His Character.

Dr. ROBERTS was 31 years of age—just in the prime of life. He was a man of positive character, with a tender, loving heart that endeared him to all who knew him, of sound judgment on the many difficult problems which arise in connection with medical practice in China, and gave promise of greatly increased usefulness in the future. One of the saddest features connected with this loss is that he was preparing for, and anticipating with great joy, a visit to his parents in the home land the coming autumn, in company with his sister, who has been for several years his companion in labour for the Chinese. After such needed rest and change they hoped to return together to resume their work laid down for a time. It is a sad ending of bright hopes, and the bereaved ones have the tender sympathies of a large circle of sorrowing friends.

The following extract is republished in the *Shanghai Mercury* from the *P. and T. Times*:—

We learn that the friends of the late Dr. F. ROBERTS have decided upon a "Roberts Memorial" to take the form of a new operating room to be erected on the London Mission Hospital premises, Tientsin. Such a room we understand is greatly needed and we therefore think no more fitting tribute to the memory of Dr. ROBERTS could have been thought of. Mr. EDMUND COUSINS has consented to act as Hon. Treasurer in connection with the fund opened for the purpose.

The Rev. Mr. NORRIS held a service last Sunday morning at Taku which was well attended. In the evening at 9 o'clock, Miss CARR intimated her wish to say a few words in memory of the late Dr. ROBERTS. All those who had the pleasure of knowing Dr. ROBERTS turned out at this late hour and at a few moments' notice to listen with interest and sympathy to what Miss CARR had to say. Dr. ROBERTS' memory will ever be held in esteem in Taku for the untiring care and energy he displayed in bestowing his services on an occasion not long past.

Dr. D. GRANT of the E. P. Mission, Chin-chew, Amoy. This amiable, kindly, and able man has, I am sorry to say, indefinitely given up work and gone home on account of ill health. Those who knew Dr. GRANT must have loved him and now hear of his present state of health with deep sorrow. May he be reinvigorated in his native land, and if possible, return to labour among this people once more.—*Contributed. A. F.*

We have pleasure in acknowledging from the indefatigable manager of THE SHANGHAI DISPENSARY, several different preparations in tabloid form. The trifling extra initial cost is more than compensated by the convenience in dispensing, the accurate dosage, and the doing away with the oftentimes haphazard rule of thumb dispensing of our native assistants. We have every confidence in the excellence of these tabloid preparations—the drugs from which they are made, are we know, procured from the best houses, and we have pleasure in recommending them to the profession in China. The compressed tabloids of *Zymene Compound*, but lately received are equal both in appearance, tasty get up, and efficacy, to any, we have met with.

This somewhat late issue of the *China Medical Missionary Journal* must be coupled with the fact that Dr. KERR's Vocabulary of Diseases—prepared for the Committee

on Nomenclature of the Medical Missionary Association of China has been printed and forwarded to all the members of the Association. This has practically involved a double number of the Journal for June and it must therefore under the circumstances take the place of the September issue. We trust however to make the Christmas number following a very full one.

MARRIAGES.

At the Cathedral, Shanghai, April 24th, Dr. F. HOWARD TAYLOR, to Miss GERALDINE GUINNESS, both of the C. I. M.

At Chentu, May 24th, OMAR L. KILBORN, M.A., M.D., to RETTA GIFFORD, M.D., both of the Canadian Methodist Mission.

At Peking, the 12th June, ISAAC TAYLOR HEADLAND, of the Methodist Episcopal Mission, to MARIAN SINCLAIR, M.D.

BIRTHS.

At Chentu, West China, March 9th, the wife of H. L. CANRIGHT, M.D., Methodist Episcopal Mission, of a son.

At Han-chong Fu, March 13th, the wife of D. WILSON, C. I. M., of a daughter.

At Foochow, April 23rd, the wife of D. H. N. KINNEN, A. B. C. F. M., of a daughter.

At Hankow, on the 5th June, the wife of THOMAS GILLISON, M.B., C.M., London Mission, of a son.

ARRIVALS.

At Shanghai, April 24th, Dr. and Mrs. FARIES and two children (returned), of American Presbyterian Mission, Shantung.

At Shanghai, for Canton, May 12th, Dr. and Mrs. J. G. KERR, American Presbyterian Mission.

DEPARTURES.

From Hongkong, May 3rd, Dr. and Mrs. SWAN and family, American Presbyterian Mission, for U. S. A.

From Shanghai, May 26th, Dr. and Mrs. STUART and family, M. E. Mission; Dr. and Mrs. WOODS, Am. Presbyterian Mission, and Dr. and Mrs. McCLOBE and family, Canadian Presbyterian Mission, for U. S. A.

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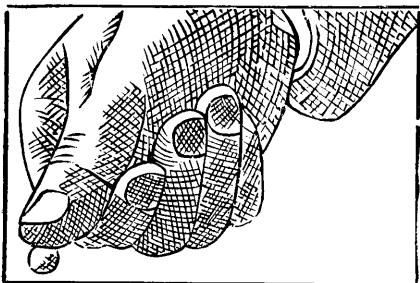
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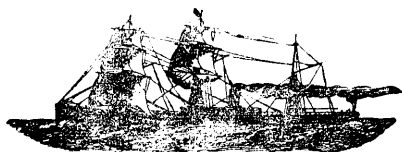
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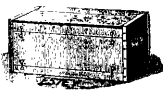


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The Subscription Price for *The China Medical Missionary Journal* is Three Dollars a year. There are to be four numbers in each volume.

We will be obliged to our friends for an early transmission of the subscription money, as we have no reserve funds with which to meet our printers' bills. OFFICERS OF THE SOCIETY, WHOSE NAMES ARE GIVEN ABOVE, ARE HEREBY REQUESTED TO KINDLY ACT AS LOCAL AGENTS IN SOLICITING SUBSCRIPTIONS AND IN RECEIVING AND TRANSMITTING MONEYS, which now should be forwarded to the Rev. G. F. Fitch, Presbyterian Mission Press, Shanghai.

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