OBservations on the spread of asiatic schistosomiasis.

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With a note on "Katayama nosophora" by G. C. Robson, B.A.

From 1852, when Bilharz announced the discovery of Distomum haematobium, down to 1904 no progress was made in the elucidation of the etiology of schistosomiasis.

In 1904, the London School of Tropical Medicine published as Cragg’s Prize Essay an account by Catto of a new form of schistosomiasis in a Chinaman. Catto’s disease was almost immediately shown to occur in the cat and dog. It then became possible for the first time to study in small susceptible animals the mode of infection with a human form of schistosomiasis.

Native tradition and the deductions of local practitioners had given rise in South Africa to the view that infection was acquired when bathing.

Looss, failing to find an intermediate host, and noting that the newly hatched embryo is killed in 1 in 1,000 dilution of hydrochloric acid, adopted the hypothesis that the infection took place through the skin, adding that the infective agent is the miracidium and that the metamorphosis into a cercarial form probably takes place in the liver.

In 1911 Matsuura and Yamamoto showed that in animals experimentally infected with Schistosoma japonicum, by exposure in water from infected rice fields, short ciliated larvae occurred in the skin.

In 1913 J. A. Kay asserted that miracidia kept in water for days lost their ciliated covering, but underwent further development to form cell masses, which he believed resulted in the infective stage.
Fig. 1.—(a) Sporocyst from liver of Kaniwa nosofihora. x 100. (b) Cercaria from the sporocyst. x 100.

Fig. 2.—Ventral view of cercaria showing anatomical details. x 300.

Fig. 3.—Lateral view of cercaria. x 300.

Fig. 4.—Rounded extremity of sporocyst from K. nosofihora, showing transverse folding, with indications of spines. x 300.

Fig. 5.—Rounded bulbous end of sporocyst extruding from liver substance. x 300.

Fig. 6.—(a) Sporocyst resembling Cercaria vivax sansino. x 100. (b) Bifid-tailed cercaria from sporocyst Fig. 6 (a). x 100.

LEIPER AND ATKINSON: SCHISTOSOMIASIS.
Fig. 7.—Katayama nosophora (n.g., u.sp.). Shell, oral aspect, x 4.
Fig. 8.—Katayama nosophora. Shell, lateral view, showing labial swelling, x 4.

Fig. 9.—Katayama nosophora. Operculum, x 12, drawn semi-diagrammatically to show scheme of coiling.

Fig. 10.—Mesentery and gut of experimentally infected mouse, showing paired schistosomes in the portal veins. (From a preparation now in the Museum in the London School of Tropical Medicine) x 2.

LEIPER AND ATKINSON: SCHISTOSOMIASIS.
Commenting upon Miyawa's statement that the infecting form is markedly different from the miracidium, Looss maintains that if it be correct the *S. japonicum* must differ in its development from *S. haematobium*.

Numerous workers have, however, failed to obtain infection with either species experimentally by application of miracidia to the skin. It may also be observed that the effect of weak acid upon a ciliated body like the miracidium need not apply to a cercaria with cuticular covering.

In 1913 Katsurada, in a summary of research on Japanese schistosomiasis, abandoned his adhesion to the Looss hypothesis in favour of a relatively simple metamorphosis of the miracidium prior to skin infection. This paper, published in December, 1913, has a note to the effect that he is informed in a private letter from a colleague that Mr. Miyairi of Kiushu had just found a reproductive stage of schistosoma in a *Lymnaea* species.

**WORK OF SPECIAL COMMISSION.**

In November, 1913, the Colonial Office made a special grant from the Tropical Diseases Research Fund to the London School of Tropical Medicine to enable the Wandsworth Scholar to proceed to the Far East and elsewhere to study the mode of spread of bilharziosis and to obtain if possible definite experimental evidence on this subject. In view of the importance of the inquiry to the navy in the Far East the Admiralty seconded Surgeon Atkinson for the duration of the investigations.

The Commission left England in February, 1914, and was engaged upon the work until the outbreak of war in August, when the investigation had to be abruptly concluded.

Our headquarters were established at Shanghai, partly on account of the ready access from this large shipping centre to both Chinese and Japanese endemic areas, and partly because the most generous facilities were granted there by the medical officer of health and the municipal authorities.

In view of the negative results of previous attempts made in London by the Wandsworth Scholar and elsewhere by others, the Looss hypothesis of direct infection was set aside in favour of one to the effect that the schistosome conformed in essentials to the life cycle of other digenetic trematodes.

The "blunderbuss" method, already used for *Filaria loa* and other investigations, was again relied on. This is, briefly, to submit all likely hosts to an overwhelming infection. The proper host will show a
marked, even fatal, susceptibility, while other even closely allied hosts will remain uninfected. For this purpose it was necessary, first, to obtain an animal with such a heavy infection that the eggs could be separated from the faeces with little contamination. None of the cases of schistosomiasis in man approximated this stipulation. After a search lasting nearly three months, and involving a river journey of over a thousand miles, we secured a dog ideal for the work. The motions consisted almost entirely of mucus and blood, crowded with eggs. Dilution with water, a shake, then rapid decantation, left abundant eggs which hatched upon the second addition of clean water.

We observed that in highly acid faeces the eggs were almost moribund, with the cilia on the surface of their embryos characteristically pointing cephalad. Under the most favourable conditions, and in stiff stools, the embryos showed movement when hatched by the addition of water up to the tenth day.

Our second necessity was to localize a small village with a fairly high percentage of infection amongst the inhabitants, and then study the local molluscan fauna and submit the various species to the "blunderbuss" test. Further, by dissection of the various molluscs from such a defined area, naturally infected specimens might be found, and the nature of the infection diagnosed:

(a) By certain peculiarities that the cercaria of the schistosome should reveal; and

(b) By a second "blunderbuss" test to infect a susceptible mammalian host with material from the suspected intermediary host.

Although the disease is widely sporadic, we failed to localize a village that would meet our requirements in the lower Yangtze Valley. At Soochow and Kashing we saw a number of cases of schistosomiasis in the various dispensaries, but these occurred in peasants who came in from outlying districts and villages to which we could obtain no guidance or which in other ways proved inaccessible. Nevertheless, throughout the whole region we collected, dissected, and compared the molluscan fauna. Of the several developmental forms and cercaria found, none presented the one morphological character—"absence of pharynx"—which would have established in our mind a strong presumption in favour of a hypothetical schistosome larva. We noted, too, that the molluscan species collected were alike over infected and non-infected areas—for example, Kashing, Shaohsing, and Henli.

The up-river hospital records indicated that cases were few, and none attributable to the present season. Examination of numerous dogs gave like results, save in the exception which, as noted above,
proved our sole efficient source of eggs. The local explanation of the paucity of cases was that the summer was one of the hottest and driest on record.

All species collected were, however, submitted to a biological test—namely, each was placed in a cylindrical jar containing water swarming with miracidia, and watched with a hand lens to see if the mollusc had a definite attraction for the miracidium, care being taken in large forms to discount results really due to the violent inhalation of water.

While the experiments with the Chinese molluscs were proceeding we continued to explore new areas and decided to include Katayama, where Fujinami’s early experimental infections of animals by brief immersion in paddy field water had been carried out, and indicated an intense local infection. From this visit the Wandsworth Scholar brought back to Shanghai large numbers of various species, including Vivipara and the form described below by Mr. Robson as Katayama nosophora n.g., n.sp. The little village of Katayama is easily reached by ricksha run of about three-quarters of an hour from Fukuyama station on the main line from Shimonoseki to Tokio; it is the centre of a highly infected area, and gives the name “Katayama disease” to Asiatic schistosomiasis. Professor Fujinami not only kindly instructed our interpreter in Kyoto as to the best means of reaching Katayama, but also advised where the most suitable assistants for the collecting might be got. He also informed us of Miyairi’s views, already referred to above.

The molluscs from Katayama were submitted to the biological test in Shanghai, and a small brown form with eight spirals and an operculum, named K. nosophora (Fig. 7), showed an extraordinary marked attraction for the miracidia, as contrasted with the other species. The small dark head and foot speedily became festooned with little white specks, and it was obvious from the agitated manner in which the snail repeatedly attempted to brush them off that their presence was a cause of considerable irritation. As further numbers attacked, the snail hastily left the water or suddenly closed the operculum and dropped to the bottom.

In many specimens the liver was found ramified with long intertwining delicate tubes bluntly rounded at the extremities and containing cercariae with bifid tails. Similar tubes with like contents had already been found in a species of mollusc near Kashing, but the tubes in the Katayama mollusc were longer and more slender, while the cercariae were smaller, showed a gut very short and slightly developed, and there was a complete absence of pharynx (compare Fig. 1, a and b, with Fig. 6, a and b).
The adult *Schistosoma japonicum* has a bifurcated gut which reunites much posterior to the ventral sucker, but the young larva, even when it has entered the final host, shows two simple lateral gut branches which unite only after some days' growth. Thus a simple short bifurcated gut was to be expected in the cercaria.

In consequence of the satisfactory result of these experiments a second visit was paid to Katayama, and in a short space of time a large supply of this mollusc was collected by the ricksha boys; owing to transport delays a large number died before reaching Shanghai, but sufficient survived to enable the second series of experiments to be carried out. The livers of a number of these molluscs were teased in fresh water, and the miracidia allowed to become free and to swim about. Laboratory-bred mice, obtained from the Shanghai Municipal Laboratory, were then immersed, none of the fluid being allowed near the mouth. In view of the outbreak of war, a start was then made for home.

The first part of the voyage through the Formosan Channel was very rough, and three of the four mice died within the first few days at sea. Just before reaching Hongkong, the animal of our earliest experiment, a month old, also died. It became putrescent before it could be examined, but a single male schistosome was found. This led one to sacrifice at Aden the few molluscs that were still alive. The last remaining mouse was then submitted to infection. This animal was safely transported to London and killed in the laboratory of the London School of Tropical Medicine a month later. Live male and female schistosomes *in copula* were found in the portal vessels. Some were removed, and a permanent preparation was made of the gut with the mesentery undamaged. This, reproduced in Fig. 10, shows the paired worms *in situ* in the mesenteric veins.

The marked attraction of the mollusc for the miracidium, the peculiar morphological characters of the cercaria, and the successful infection of a laboratory-bred mouse from cercaria obtained from Katayama molluscs after several weeks' captivity at sea, leave no room for doubt that the schistosome has a life-cycle similar to that of other digenetic trematodes.

**DEVELOPMENTAL STAGES.**

The thin walled tubes found in the liver are undoubtedly sporocysts. These tubes are cylindrical, and contain the cercariae usually in single file (Fig. 1, *a*). The ends are bluntly rounded; sometimes an end presents a knob-like constriction. There are here also very fine trans-
verse rugae which appear to bear spines, but these do not extend to any distance along the sporocysts (Fig. 4). The sporocysts in the liver of a single mollusc often appear to be in about the same stage of development. This fact, taken with the minute spines, would indicate that these sporocysts are not those originally developed from the infecting miracidia, but are probably daughter sporocysts. We were not able in the time at our disposal to settle this point. The knob-like extremities (Fig. 5) occasionally seen at the tips of the sporocysts might lead one at first sight to suspect that these were really rediae. The muscular sucker, the walled gut, and the "limbs" which should characterize a redia are, however, absent.

This coincides also with our findings in the case of the bifid-tailed cercaria (Fig. 6, b) found at Kashing, as well as those of Looss in Cercaria vivax and of other observers.

The cercariae (Figs. 2 and 3) measure 0.25 mm. in length with a greatest width of 0.04 mm. The body is 0.1 mm. long by 0.04 mm. broad. The tail is 0.1 mm. by 0.01 mm. The prolongations of the tail both measure 0.05 mm. by 0.006 mm.

The whole cercaria is covered with minute spines. There are no cilia. The oral sucker is enormously developed, occupying almost the anterior third of the body.

It is urn-shaped, and on its lip there is a series of small tubercles. The dimensions are 0.04 by 0.02 mm. From the oral sucker a delicate tube, representing the oesophagus, passes backwards for 0.01 mm. There is no indication of pharynx; the oesophagus bifurcates into two wide, thin-walled lateral branches, 0.02 mm. in length, which end blindly at the level of the anterior margin of the ventral sucker.

The ventral sucker is small, but very muscular. The lumen is reduced and triradiate. The sucker has a uniform diameter of 0.01 mm.
and is slightly protuberant just behind the greatest width of the body, while here, too, the body attains a dorso-ventral thickness equal to the greatest width. On either side of the ventral sucker, extending backwards towards the root of the tail and forwards between the two lateral gut branches, are oval gland masses, five or more in number, on either side. From these there pass forward, slightly dorsally and laterally, paired ducts which discharge into the oral sucker near the mouth.

In the middle line, immediately in front of the ventral sucker, a clear, pear-shaped vesicle is sometimes visible.

CONCLUSION.

It would appear that the above results confirm Miyairi’s main conclusion as to the transmission of *Schistosoma japonicum*. Unfortunately, his paper is inaccessible, as it is in Japanese and in a journal, *Nissin Igaku*, which leading Japanese booksellers have been unable to procure.

A comparison of the detailed conclusions is for the present therefore impossible. The only information at present available to workers is in an annotation by Kumagawa in the *Tropical Diseases Bulletin* for March 30th, 1914. We find from this that, according to Miyairi and Suzuki, ‘the miracidium, after penetrating the cuticle of the snail’s body, proceeds to the gills and the walls of the digestive canals. After twelve days the first rediae appear and gradually concentrate to the hepatic ducts, elongating, and a number of the second rediae are seen. The authors put mice into the vessel in which the full-grown snails were fed for three hours every other day for four days. After three weeks they found a great many *Schistosoma japonicum* in the livers of the mice.’ The snail, which the authors conclude is the intermediate host, has a dark-coloured shell with seven spirals. This is common in the water-ways or ditches.

It will be noted that there are said to be redia stages in the course of the life-cycle, and that the snail shell has seven spirals. No diagnosis of the snail is given, or of the infective agent.

In conclusion, we have to acknowledge the kind assistance given to the expedition by the chairman and secretary of the Shanghai Municipal Council, the cordial help and advice of the principal medical officer of health for Shanghai, and of Drs. Moore and Noel Davis in the Health Laboratory. In our search for hosts we were greatly helped by Drs. Aird, Skinner, Fujinami, Goddard, Jackson, and many others, to whom our grateful thanks are due.
NOTE ON "KATAYAMA NOSOPHORA."

By G. C. Robson, B.A.

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The mollusc used in the experimental transmission of *Schistosoma japonicum* and now described was reported by Dr. Leiper to occur in damp moss and grass on the sides of the irrigation ditches and also on growing plants in the rice fields, in very great quantities. It was therefore a matter of surprise to the author, on making a search through the literature of Japanese land and fresh-water mollusca, that no description of the form in question was to be discovered. A very careful study of all the available literature of Chinese land fresh-water forms (together with those of adjacent countries) was made also, and the author had the advantage of Mr. E. A. Smith's assistance. The result was to confirm the preliminary experience, and in consequence it became necessary to regard it as a new form. That a fresh-water mollusc occurring in such great profusion should to all intents and purposes be undescribed is indeed very extraordinary. Excluding the possibility of its having been described in some inaccessible Japanese publication, we have to bear in mind that it may have been recorded, through ignorance of its anatomical characters, on conchological grounds as referable to some other family. A second and possibly more likely solution may be sought in a suggestion that it may have only recently attained this plentiful development. Mr. E. A. Smith reminds me that *Paludestrina jenkinsi* when first found in England was obtained in large quantities though no previous record had been made of it in the already copious records of the British occurrences.

With regard to the systematic position, it has to be admitted that until more anatomical knowledge is forthcoming the generic position here assigned to this interesting form must be regarded as temporary, as the material was not preserved suitably for dissection.

The radula has been very kindly compared by the Rev. H. M. Gwatkin with those of various hydrobiid genera in his collection. He is of opinion that it is nearest akin to *Pyrgulopsis* and (less nearly) to *Pechydrobis*. Other genera (for example, *Littorinida*) offer a basis for comparison in single teeth, but as far as the material available for study and comparison goes, it appears to be distinct from all the known hydrobiid genera.

KATAYAMA, gen. nov.

Radula: Central tooth with three basal denticles and a cutting surface composed of a large median and two lateral cusps a side. The admedian tooth large, with a prominent cusp and five smaller ones; the succeeding teeth having
eight and seven cusps respectively (Fig. 11, a). The outer marginal has a strongly
cusiate extremity when seen in profile (Fig. 11, b).

Shell, with eight whorls (Fig. 7) the last two usually eroded, increasing
gradually in size and exhibiting a moderately convex profile and a fairly well
marked suture to correspond. The general shape is acuminate. The peristome is
continuous, of a rich chocolate-brown colour, thickened and reflected upon the
ventral and columellar lips. In the region of the peristome the body-whorl is
abruptly extended and the transverse growth lines tend to assume the character of
ribs. The colour is light olivaceous brown, the body-whorl being occasionally
straw-coloured, and the two apical whorls very dark purplish-black owing to
erosion. The texture is horny and fairly solid. Irregular transverse growth lines
cross the finely and irregularly granulated surface which in place, occasionally
exhibits, under a high power, a faint spiral sculpture.

Dimensions of Shell.—Maximum height 8.5 mm.; maximum width 3.1 mm.;
maximum width of the aperture 2.75 mm.

Operculum (Fig. 9) spirally coiled, with the nucleus of the spiral markedly
eccentric being placed towards one extremity in a lateral position.

Katayama nosophora, n. sp.; with the characters of the genus.

Locality of types: In irrigation ditches and rice fields at Katayama.

The types are deposited in the British Museum (Zoological Depart­
ment).


THE CHOICE OF AN ANAESTHETIC FOR THE CHINESE.*

JAMES L. MAXWELL, M.D., (London).

I wish to call particular attention to the title of the subject, "The
choice of an anaesthetic for the Chinese." It will explain why I
scarcely refer to the scientific aspect of the question, though I should
be the last to wish to detract from the value of scientific investigation;
nor touch, except very cursorily, on the problems to which anaesthetics
have given rise in the home-lands. Again, this paper will not deal with
local anaesthesia which, valuable as we all know it to be, is also very
limited in application; nor, for the same reason, with the anaesthesia
induced by narcotics alone. For want of personal experience I am unable
to touch on anaesthesia by infusion, or on rectal anaesthesia, or on the
much more important subject of spinal anaesthesia. Finally, I am very
sorry that I can say nothing about the intra-tracheal insufflation of
ether which, for operations on the chest and possibly for many other
major operations, promises to have a vogue of great importance. At
present, the apparatus for its use is very costly, and it must be remem-

*A paper read at the Biennial Conference, C. M. M. A., Shanghai, February,
1915, in opening a discussion on the comparative merits of ether and chloroform
as anaesthetics for the Chinese.
bered that in our own time other anaesthetics have arisen with much flourishing of trumpets, only to drop quickly into public disfavour.

For practical purposes then we are left with the two great inhalation anaesthetics—chloroform and ether, mixtures of these, with the use perhaps of other drugs as adjuvants. The mixtures, some of which I must confess are widely used, do not greatly appeal to me. The drugs used are of different rates of volatilization, and produce vapours of different specific gravities. When dropped on a mask the proportion of the constituents present in the breathing mixture must be constantly changing, a method of working in the dark which seems to me hardly satisfactory. I should like then to deal with chloroform and ether administered alone, or given, not in combination but in sequence.

Now let us try to agree on the points we should desire in an ideal inhalation anaesthetic. They are, I think:

A. As regards the patient,—
   1. Freedom from danger, immediate or remote.
   2. Freedom from minor after effects.
   3. Pleasant odour.

B. As regards the surgeon,—
   1. Complete muscular relaxation of patient.
   2. Absence of vomiting under anaesthetic.

Over some of these points we need not waste much time. As regards pleasant odour and speedy induction, there can be no two opinions, all must agree that ether should give way to chloroform. These are points of small importance—though to the busy surgeon, with perhaps a dozen cases to tackle in a morning, the fact of speed of induction may be a recommendation of some value. As regards absence of vomiting under anaesthetic, there is probably little to choose, as after either anaesthetic given properly, it should seldom or never occur. Concerning the minor after effects, probably different opinions will be held. I think myself that both headache and nausea are more common with ether than after chloroform, and the unpleasant taste of ether in the mouth is, I consider, a real minor drawback. With regard to complete muscular relaxation, a very important point in all abdominal operations, it can be obtained with both anaesthetics, but it is generally recognised that it is more easily obtained with chloroform than with ether.

This leaves as the most important points to be dealt with, the question of actual danger to the patient, either immediate, that is during the course of the anaesthesia,—or remote, that is in the post-
The Choice of an Anaesthetic for the Chinese.

The remote dangers of anaesthetics are two; (a) pneumonia, which except in certain high abdominal operations is confined to ether anaesthesia; (b) post-chloroform poisoning, which, as its name implies, is practically confined to chloroform. It is hardly necessary to say that in referring to pneumonia, I do not include insufflation pneumonias, as these are dependent on the anaesthesia itself, not on the agent producing it. Pneumonia following chloroform anaesthesia is very rare. I have only seen it once, apart from cases where the diaphragmatic region was exposed at the time of operation, as in operations on the stomach, and in splenectomy. Pneumonia following ether, when the old methods of administration were used, was relatively much more common. I understand that with "open ether" it is not so frequent, but in many tropical regions "open ether" can be given only with great difficulty, or not at all.

Post-chloroform poisoning is, however, a matter of much more serious import, and is a bogey constantly held up before those who use chloroform freely. Exactly what post-chloroform poisoning is remains far from clear, as similar symptoms may occur after ether anaesthesia, but very much less commonly. It seems to be a toxaemia, possibly starting in the liver, or it may be primarily intestinal with only a secondary involvement of the liver. The symptoms are those of a pure toxaemia,—an asthenic condition going on to stupor, and constant vomiting. The vomiting may occur alone, without the other signs of toxaemia, as in a case in the Tainan Hospital, where constant vomiting after gastro-enterostomy proved eventually fatal without any other signs supervening. Indeed, all the cases reported to me as occurring in Chinese had this symptom and this alone. Even so, the fatalities hardly run into double figures in a total of seventy thousand operations. Now I should like to add a few further notes on these fatal cases. One feature is common to them all, as my correspondents have informed me. All the cases were operations of great length in which a very large amount of chloroform had been administered. In the case that occurred in Tainan, the patient took the anaesthetic very badly and an enormous quantity was used to keep him under. It should also be noted that in the early days of chloroform this condition was quite unknown. I believe that in these two facts may be found the explanation of the danger, and an easy rule for its avoidance. When chloroform was first used, the preparation of the patient, I am credibly informed, was practically nil. Now, at home, the wretched patient is purged and
starved, a condition being thus produced in which intestinal toxaemia arises with great ease.

The simple rules for avoiding post-chloroform poisoning are:

1. Do not give chloroform for more than an hour, but if the anaesthesia is to be continued, go on with ether dropped on to the chloroform mask.
2. Make no attempt to empty the patient's bowel; it is sufficient if he has not, within the last two hours partaken of food. Purgatives are seldom required before operation.

These simple rules will, I believe, completely abolish all danger of post-chloroform poisoning. Repeated chloroform administration has no dangers in this line if the anaesthetic be reasonably given. Just before leaving Formosa I had a case of a small boy with pyaemia, who had been given chloroform eleven times in a few weeks for the purpose of opening abscesses, and suffered in no way from the drug, recovering very rapidly from each administration. He left the hospital a picture of health.

There remains but one more point to be considered and that is the most important of all, viz., the immediate danger of chloroform during the period of anaesthesia. Here it must be confessed that deaths at home have been sadly numerous, and have in many places quite shaken the confidence of surgeons in chloroform as an anaesthetic.

Now this untoward experience has not been met with among surgeons in China, nor indeed in many other tropical and subtropical countries. I have made many enquiries on this point and collected a mass of statistics. The numbers given are so large, and the experience of many of my correspondents so great, that I believe these figures are quite beyond criticism. In seventy thousand administrations there have been only nine deaths. It should be further stated that some of the fatal cases were in a desperate condition before the chloroform was given, and it is rather doubtful whether the chloroform can be fairly blamed as the cause of these deaths. Even accepting the worst construction, I maintain that these figures fully support the contention that chloroform is practically without danger to the Chinese.

It must be confessed that the contrast between the safety of chloroform here, and its reputed dangers in the home countries, is rather remarkable, and if a reasonable explanation could be given it would help to clarify our knowledge of the whole subject. I shall try briefly to indicate in what direction the explanation may possibly lie. The dangers of chloroform are twofold, as affecting the respiration, and as affecting the heart. Failure of respiration only occurs as a result of a
serious overdose of the drug, and is always heralded by dilatation of
the pupil, and by an irregular rhythm of the respiratory movements.
At this stage of administration the heart is seldom if ever affected, and
the anaesthetist should be taught to leave the pulse alone and con­
centrate his attention on the respiration. If he does this, and suspends
the administration when irregularity occurs, the use of chloroform as
far as the respiratory centre goes is quite free from danger. Should
the anaesthetist be so careless as to continue giving the drug until
respiration ceases, the patient may yet be restored with almost com­
plete certainty by the employment of artificial respiration. The ques­
tion as to the toxic effect of chloroform upon the heart is quite
different. Here the fatal issue always occurs during light anaesthesia,
and usually in the early stage. It generally happens before the patient
is properly under, though occasionally reported when the patient has
been allowed to come round in the course of the operation, or when
waking up at its close. It has recently been shown that the pathological
condition is one of acute ventricular fibrillation.

Further, it is doubtful whether chloroform alone ever causes fibril­
ation of the heart. Experiments all go to suggest that chloroform and
some other stimulus is required to produce this condition. Still further,
it has been shown that with moderately deep anaesthesia, ventricular
fibrillation cannot occur. The danger is entirely due to stimuli, such
as painful impressions on the nerve endings, and perhaps mental
excitement due to fear and struggling, occurring while the patient is in
the condition of light anaesthesia. The rule for safe administra­
tion is to avoid light anaesthesia, or to avoid stimuli. How does this
apply to the case in point? On the one hand, we have at home skilled
anaesthetists who vie with each other in producing, by means of
wonderfully complicated apparatus, an anaesthesia with a minimum
percentage of chloroform vapour in the inspired air, and with it all a
steadily increasing death rate from chloroform. On the other hand,
out here, we have untrained Chinese assistants who often give
chloroform, if the experience of others tallies with mine, in a most
reckless way and yet there is an almost negligible death rate. Then, by
way of further contrast, we have at home people of highly nervous tem­
perament, and too often of an alcoholic type, who give way to fear and
struggling during the induction period, especially if this is prolonged. In
China we have a people of a more phlegmatic type, and seldom alcoholic,
hence fear and struggling during the induction period are rare. I offer
these suggestions as a working hypothesis to account for the difference
in the death rate between chloroform anaesthesia at home and here.
The China Medical Journal.

The rules then for chloroform administration should be, rapid induction with heavily saturated chloroform vapour, no attempt to handle the patient for any purpose whatever till almost fully "under," regular administration through the whole time of operation, and administration continued until the operation is finished and the last stitch put in. I would further advise giving an injection of morphine, atropine, and hyoscyamine as a preliminary in any case where the patient is nervous, and in all cases of operation on the upper abdomen, in order to secure very quiet breathing and so diminish the danger of post-anaesthetic pneumonia.

The question we are discussing is "The Choice of an Anaesthetic for the Chinese." My desire has been to prove that chloroform properly given is practically without danger. Also that it has some undoubted advantages over ether, which many surgeons have reported as extremely difficult to handle in the tropics. Further, to the mission doctor, ether has the great drawback of increased expense, the quantity used being infinitely more than for a corresponding period of chloroform anaesthesia.

Ladies and Gentlemen, my argument is finished, but I cannot deny myself the amusement of quoting an extract concerning ether pneumonia culled from a paper I receive occasionally from the United States.* It runs as follows:—

"We do not have ether pneumonia in our surgical ward, and the reason we do not is because the patient who is to have an operation has his teeth and mouth thoroughly cleansed twenty-four hours before going into the operating room, and he keeps cinnamon water in his mouth so there are no germs growing there. Then we begin treating him for pneumonia before he goes to the operating room. He has fomentations, heating compresses on his chest, and every five minutes during the operation this compress is changed, and for three days after the operation he has fomentations and heating compresses on his chest. We treat him just as though he had pneumonia, with the idea that if we turn the hose on the house before it gets afire, it is not likely to get afire."

Comment, I think, is needless. I drop a tear of sympathy for the poor sufferers, who are not allowed to die peacefully under chloroform! *

*Without wishing to lessen either the force or humor of a good point, perhaps it is only fair to state that the paper referred to is issued gratuitously by a well-known vegetarian sanitarium with a name reminiscent of war, located in a town on the Kalamazoo River, in Michigan.—The Editor.
THE CHOICE OF ANESTHETICS FOR THE CHINESE.*

By SAMUEL COCHRAN, M.D., Hwaiyuan.

In discussing this question, it is doubtless wise for us to avoid taking the view that any substance or method can be selected which is in itself superior to others and should be employed for all patients. Each case should be weighed on its own merits and the best anesthetic chosen for its particular needs. We may, however, discuss the strong and the weak points of the various methods, and their applicability to different classes of operations.

Local anesthesia has of course a very wide applicability, and should always be used where possible, but further discussion of it is unnecessary to-day. Spinal anesthesia has under present conditions in China a very limited use: its technic is still in an experimental stage, the conditions that make for safety or danger are not thoroughly understood, and its use is hardly advisable for most mission hospitals.

Nitrous oxide is credited with greater safety and fewer unpleasant effects than other general anesthetics, and it is finding increasing use in extended operations. The objections to its use in China are that it is more expensive, it is at present practically impossible to obtain, its apparatus is more complicated and costly, and for long operations it needs more skill in administering than do ether or chloroform by the drop or vapor method. It would seem, however, that the time has come for it to be used in some of the larger centres; its manufacture is very simple and does not require much of an outfit, being quite within the capabilities of many of our hospitals. It is preferable to any other anesthetic for a considerable range of cases, especially those of short operative duration, such as opening abscesses and fistulae, incising felons, pulling teeth, etc.

Ether. Safety is the main advantage which ether possesses over chloroform, which is in China the other drug that competes with it for consideration in the majority of cases requiring general anesthesia. This will be discussed more fully when we come to chloroform. The objections urged against ether are its cost, bulk, volatility, the fact that it is disagreeable to patients, and certain dangers, especially to the kidneys and to the lungs. Recent years have seen a great advance in the skill with which ether is given, and modern methods have to a very

*A paper read at the Biennial Conference of the C. M. M. A., Shanghai, February, 1915, in reply to the previous paper by Dr. Maxwell.
large extent made void the objections which have been rightly made to it in the past.

1. Cost. A good deal less ether is used by the drop or vapor method than when it was poured in large quantities on a cone made of a newspaper folded in a towel. Those who use a closed inhaler probably use still less. The last consignment of ether used in our hospital consisted of 270 bottles, of one half lb. each or about twelve fluid ounces. Each bottle cost us Mex. $.60 from bond, including freight, duty, and all other charges. With this amount we anesthetised 417 patients, which is at the rate of $.39 per each patient. If allowance is made for the value of the bottle, it works out to $.25 an anesthesia. As each of our patients undergoing operation pays us $2, we feel that we need not let the expense forbid our using ether if it seems otherwise suitable.

2. Bulk. Chloroform is doubtless the only drug available in certain services such as field, military, or mission hospitals, where supplies have to be carried by pack mule or coolie. This however does not apply to most hospitals in China.

3. Volatility. Ether being more difficult to handle in very hot weather has often on this account been discarded. It is, however, being more and more used in the tropics, in such places as the Philippines, and the southern parts of the U.S.A. It would seem therefore that the choice of an anesthetic need hardly be made on this point.

4. Disagreeable effects on the patient. These consist of a choking sensation, which often terrifies timid patients, a great increase of mucous secretion in the mouth and pharynx, nausea during and after operation, thirst, a disagreeable after-taste, and post-operative vomiting.

5. Danger to the lungs (post-operative pneumonia) and to the kidneys.

These last two objections, namely the discomforts and dangers, have been greatly obviated by fuller knowledge and greater skill in giving the anesthetic. In the first place they are directly proportional, to a considerable extent, to the amount of anesthetic used, and methods which limit this cut down, pari passu, the objectionable results. Among the improvements in method may be suggested the following:—

a. A preliminary narcotic, say morphine sulph. gr. 1/6, and atropine sulph. gr. 1/150, given one half hour before the ether. This has the following advantages; (1) it considerably diminishes the amount of ether required, and thereby the tendency to post-operative nausea and the danger of pneumonia or of suppression of urine; (2) it
usually completely obviates salivation, doubtless the direct cause of
many of the cases of pneumonia and much of the post-operative nausea
and vomiting, which were aggravated by the buccal secretion swallowed;
(3) it is in line with the anoci-association method, bringing the patient
to the administration of the anesthetic in an undisturbed frame of mind,
a condition which avoids the dangers which terror causes. Somewhat
in the same line is the beginning of the anesthesia by putting a few
drops of the oil of orange peel on the mask; if, after a few whiffs of this
substance, ether be gradually added it is hardly noticed and choking
and fright are avoided.

b. The drop or vapor method, which is a great improvement over
the folded cone. Less ether is given and unfavorable effects are
diminished.

c. Care as to the quality of the ether. It is definitely known that
ether, if left in poorly stoppered bottles, rapidly absorbs moisture from
the air. Then in the presence of air, particularly if light is not
excluded, there take place a series of oxidizing reactions, resulting in
the formation of hydrogen peroxide, acetic acid and kindred substances,
and acetaldehyde. It is also known that some of these substances are
irritating to the respiratory tract, and that they have other harmful
results such as embarrassing respiration and causing nausea. Some of
the disagreeable results attributed to ether in the past are doubtless
due to impurities, and are easily avoidable by scrupulous care in the
purchase and storage of the anesthetic.*

Much has been said in support of the opinion that Orientals take
chloroform exceedingly well and the opinion is doubtless well founded.
It is equally true that they take ether exceedingly well. I have in mind
a very strong contrast between the way patients took ether when I was
an interne in an American hospital, and the way Chinese patients take
it as administered by our hospital attendants and students. The contrast
is all in favor of the latter.

There is one class of patients, however, in which I am of the
decided opinion that the use of ether as an anesthetic should be avoided,
viz., patients with inflammation of the respiratory tract, particularly
cases of tuberculosis.

* For America and England the best form of container seems to be a sealed tin
can. But cans are apt to rust and leak in coming to the Orient and in my
opinion the best form of receptacle for China is a bottle (of non-actinic glass),
with a cork stopper, its tip protected by tin-foil. Our own hospital has had no
trouble in obtaining ether from bond packed in this form.

See The Chemistry of Anesthetics, Ethyl Ether. Baskerville and Hamor,
Journal of Industrial and Engineering Chemistry. May and June 1911.
CHLOROFORM.

Advantages. It is pleasanter, cheaper, quicker, and more convenient than ether, although the difference is considerably less than we used to think when ether was not so well given.

Disadvantages. Its main disadvantage, in the opinion of most surgeons, is its greater dangerous.

1. Statistics seem to show this to be true. This is a very difficult subject on which to collate experience, because it is so hard in any particular case to appraise justly the share each of a number of causes may have had in determining the death of a patient. Dr. Maxwell's figures show a creditably low mortality for the hospitals from which they were gathered. It is quite possible that the death-rate from chloroform may be less in warm countries than in temperate; evidence has been offered to show that it takes less of warm vapor to anesthetize a patient than of cold, and the warm is possibly safer. In a recent collation of statistics in America none of the chloroform deaths came from the southern states. It is probably also true that warm ether vapor is safer and more efficient than cold.

2. Experience shows that chloroform is more treacherous than ether, if one may say so without begging the question. I will quote Mortimer; not because I desire to settle the matter by appealing to any particular authority, but because he expresses my own decided convictions and experience better than I can. "Ether is seldom responsible for a 'death on the table' in uncomplicated cases, continued overdoses resulting almost invariably in such a gradual failure of the respiration that this could hardly arise except through unusual carelessness or inexperience—and even when breathing ceases there is seldom difficulty in restoration as the heart is still working." "Practical experience demonstrates that whether there is or can be a primary failure of the heart or not, any disturbance, which would have comparatively innocuous results if the patient were taking ether or C. E. mixture, is liable under chloroform to have a fatal effect, the patient suddenly passing into a condition in which attempts at restoration are unavailing—and that such may occur in the absence of an absolute overdose, i.e. of a strength of vapor which would of itself be dangerous.''

This accords precisely with my own experience and is the principal reason why I prefer ether to chloroform for most cases. As an interne I gave chloroform to about two-fifths of our cases, at the choice of the operating surgeon, and ether to about three-fifths. My recollection is very vivid that one could count confidently on an undisturbed action of
The Choice of Anesthetics for the Chinese.

The heart under ether, with plenty of warning before the patient was in a dangerous condition from the anesthetic. Under chloroform, on the other hand, there was a very considerable proportion of the cases where the circulation would suddenly be markedly affected by the anesthetic, the pulse becoming either weak, or slow, or irregular, or rapid; and that without warning. What experience I have had with Chinese under chloroform anesthesia does not make me believe that they are very different from Europeans in this respect; at least not in our part of China. A few years ago I was operating on a case of inguinal adenitis in a Chinese young man whose general condition was entirely good, the chloroform being given by a thoroughly competent and experienced American surgeon. The pulse suddenly became bad, respiration stopped, and we had a very anxious half-hour before the operation could go forward. This is one of several similar cases with which I am acquainted that make me doubt whether Chinese are very dissimilar to Europeans in their reaction to chloroform. As our anesthetics must be given by students and dressers, relatively untrained men, I confess that I can operate with much freer mind with the patient under ether. One feels reasonably sure that there will be early warning of trouble, either from the respiratory rhythm, or from the color of the blood. Under chloroform I cannot avoid a constant anxiety as to whether the student is paying close attention to the patient's pulse. And, for myself, I am willing to respect the warnings of other men that danger of chloroform is increased in conditions of shock, hemorrhage, eclampsia, in lymphatism, and in certain operations such as tonsillectomy.

3. Comparatively recent researches on the pathology of delayed chloroform poisoning indicate that rather small doses of the drug by inhalation regularly cause injury to the viscera, the essential lesion being a central necrosis of the liver lobules. This holds true for guinea-pigs, dogs, pigeons, rats, and rabbits. Lengeman and other workers have shown that ether causes no damage to the viscera. The same lesions are found in human beings in which fatal chloroform poisoning has taken place. Now it is true that these fatal cases are not very common, and also that delayed chloroform poisoning has not been reported as occurring in a Chinese patient. Nevertheless, the facts above mentioned are sufficiently suggestive to make one uncomfortable in thinking that the patient to whom he is giving chloroform may very

2. Whipple and Sperry. Johns Hopkins Bulletin, Vol. XX, No. 222, September 1909,
possibly in two days have a liver and kidneys like those I am exhibiting under the microscope.\textsuperscript{3} Especially is this true of pregnant women. Cragin\textsuperscript{3} reports that of 251 cases at Sloane Hospital treated for eclamptic conditions with chloroform there was a mortality of 28 per cent. After seeing these slides which I am showing you he changed to ether and the mortality fell to 12 per cent.\textsuperscript{4} \textit{Nil nocere} is a very sound principle—in nothing to injure your patient. We do not give calomel to salivated patients, we avoid cantharides in nephritis; croton oil should not be given to a patient with gastritis, we do not administer quinine to one with tinnitus if we can avoid it, and the list might be indefinitely extended. Accordingly, with our present knowledge we have a hint to be cautious with chloroform, especially with patients whose liver or kidneys may be in a damaged condition.

To conclude: My feeling about anesthetics is as follows; use local anesthesia wherever possible; in hospitals with a large service, or in the larger medical centres, we hope to see nitrous oxide soon introduced and used for many of the shorter operations, particularly where there is some contraindication to ether and chloroform, such as pulmonary disease or deep anemia; in ordinary, uncomplicated cases use ether by the drop or vapor method—preferably the latter; use chloroform for a certain comparatively small line of cases where the use of other anesthetics is inadvisable, as patients with pulmonary trouble, for example, where operation is unavoidable and cannot be done under local anesthesia.

\textsuperscript{3} These sections are from Howland's cases. Howland and Richards, \textit{Journal of Experimental Medicine}, Vol. XI, No. 2, 1909.

\textsuperscript{4} Sloane Hospital, Obstetrical and Surgical Report, 1913, p. 98.

\textbf{Note.}—We regret to state that the report of the general discussion which followed the reading of the papers by Dr. Maxwell and Dr. Cochran, which was extremely interesting, cannot be printed, as the notes of the discussion taken by one of the secretaries of the meeting have been lost or stolen.—\textbf{Editor.}
I was struck with the relatively low percentage of the finely Granular Oxyphile cells (Polymorphs) and the high percentage of the Hyaline cells and Lymphocytes in the blood of the Chinese, when compared with the English standards.

So early last year, at the Shantung Road Hospital, Shanghai, the leucocytes of 57 males were counted. The subjects were apparently healthy people, consisting of doctors, dressers, servants, my own friends, and my friends' servants. Their ages averaged 30.9 years; the oldest was 60 and the youngest 17. They were all Chinese. The average period of residence in Shanghai was $11\frac{1}{2}$ years; the longest being 36 years, and the shortest 0.1. The blood was taken at all times of the day.

The counts were taken in lines, at right angles to the long axis of the slide, as recommended by Rogers; 300 cells were counted in all cases except 4. Of these 4 cases, 400 cells were counted in 1 case, and 200 cells each were counted in the 3 other cases.

To differentiate the Hyaline cells from the Lymphocytes, those that were equal in size to or larger than an average Polymorph were classed as Hyaline.

Here are the standards given by two authorities:

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<th>Schafcr.</th>
<th>Hutchinson and Rainy.</th>
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<tr>
<td>Finely Granular Oxyphile</td>
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<td>60-70 %</td>
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<td>Coarsely Granular Oxyphile</td>
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<td>1-10 %</td>
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<td>Basophile</td>
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<td>Hyaline</td>
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<td>Lymphocyte</td>
<td>... ...</td>
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The results obtained at the Shantung Road Hospital were:

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<td>Finely Granular Oxyphile</td>
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The Arneth counts as worked out between the Americans and the Filipinos proved to be different, and different too between Americans
in America and American residents in the Philippine Islands.* It is interesting to speculate whether the cause of these blood changes is climatic or dietetic, or whatnot.

Note.—Chamberlain and Vedder (1911), during their investigations in the Philippine Islands on the effect of a tropical climate on white men, performed 72 Arnetli counts on American soldiers, and for comparison fifty on natives of the island. Their work led them to the conclusion that "the average Arneth's picture showed a marked drift to the left in the case of Filipinos, and a slight drift in the same direction for American residents more than one year in the Philippines."—Ed.

DEATH OF CHILD PROBABLY DUE TO EMETIN.

JOHN A. SNEILL, A.B., M.D.

This case is of interest because of its rarity. I am unable to find the report of another case in which emetin caused death, if that was the cause in this case. The child was in the care of Dr. Wong, a native doctor trained in one of our mission hospitals, and a man of considerable ability.

E. H. Age 5, Female. Has always been a healthy child though not robust. Has had no severe sickness.

During the early hours of November 3, 1914, she was restless and found to have a temperature of F.103.6°. This went up to 104 by 7 a.m. A dose of castor oil was given and two large movements resulted with nothing to attract attention. By 8 p.m. her temperature was 100, and the next morning it was 97. During the day of the 4th there were frequent movements with blood and mucus, and the child refused food. The temperature did not go above normal.

On November 5th, Dr. C. M. Lee and myself were called in consultation. The child was lively and seemed her usual self; her only discomfort seemed to arise from the frequent stools, one about every hour. Live amoebae were found and 1/3 gr. of emetin hydrochloride was given intravenously. This caused only a slight nausea. We recommended the subcutaneous injection of 1/2 gr. emetin hydrochloride daily. This was given for five days. On the 6th the stools continued frequent and of the same character and on that evening the temperature went to 102, but was normal again the next morning. On the 7th there were only 3 or 4 stools with a smaller amount of blood and mucus. That evening the temperature went to 101.6. During the following days, 8th, 9th, 10th and 11th, the temperature ranged from 98 in the morning to 100 and 101 in the afternoon. The stools continued 3 to 6 a day, but mucus and blood persisted in small quantities.
Death of Child Probably Due to Emetin.

On the 11th 2/3 gr. of emetin was given. Dr. Lee again saw the case on the 12th and concluded that the child was not getting enough emetin, so 1 gr. was given for three days. On the 13th the stools were well formed and there was no blood or mucus. On the 14th there was but one stool and that normal in every particular. The child slept soundly and seemed to be well. The emetin was discontinued and the temperature remained normal. On the 15th the child had slight photophobia. On the 17th the mouth became slightly ulcerated and the gums swollen. The next day there was a slight rash on the legs but this seemed to disappear. Small mucus movements began. On the 19th Dr. Wong thought he found amoebae and gave 1/2 gr. of emetin and on the next day 1 gr. The stools contained blood and mucus. On the 21st there were only three movements and 2/3 gr. of emetine was given. The photophobia was more marked and the child was getting weak. The parents said she was much better after these three injections of emetin. There was a slight rise of temperature, 100.0 on the 22nd. On this day another 2/3 gr. of emetin was given, and there were four movements, two of which were well formed. There was a rash, which had first appeared on the 18th over the entire body including the face; the lips and gums were swollen. The 23rd was the same with the rash more intense. On the 24th I was again called in consultation. The child was not as weak or emaciated as might be expected after three weeks of dysentery. There was marked photophobia and a general petechial rash, which was somewhat contiguous on the face. The lips were noticeably swollen and dry; the mucus membrane of the mouth was ulcerated, the tongue badly coated, and the breath very foul. The tonsils and throat were ulcerated and seemed to cause considerable pain on deglutition or articulation, which acts were performed with apparent inconvenience and discomfort. This difficulty in swallowing and speaking was explained by the ulcerated condition of the mouth and throat. The stools which were three to five a day contained some blood (bright red), mucus and faeces. It was different from the pus and blood of dysentery. The abdomen was slightly tender on deep pressure. The pulse was about 80 and of good character. It was decided to remove the child to Soochow.

Up to this time her appetite had been very good except just after the injections of the larger doses of emetin, when she was slightly nauseated. Her diet had consisted of porridge and other soft articles, and eggs. The nourishment of the child had been very well maintained.

On arriving at Soochow in the afternoon, she was given 1/3 gr. of emetin and it was repeated the next morning, 25th. The rash on the
face had all run together and the mouth symptoms had become worse. Dr. Park was called in consultation and it was decided that possibly, there was emetin poisoning. No more emetin was given.

Just here I may mention that the mother recalled that on two previous occasions, the child had had rash similar to the present one but much less in amount. On both of these occasions she recalled that ipecacuanha had been given and the doctor in attendance had been unable to explain the rash. If the ipecacuanha was the cause of the rash it might be said that the child had an idiosyncrasy for the drug.

During the night of the 24th there was a rise in the temperature which went as high as 104 during the next few days. Under vigorous local treatment and small doses of calomel the condition of the mouth, throat, and tongue improved greatly. The ability to swallow became progressively worse and could no longer be explained by the superficial condition of the throat. She could not articulate distinctly, and it was with great difficulty that she coughed up phlegm which accumulated in the throat. I concluded that there was a partial paralysis of the muscles of deglutition.

The pulse during this time varied from 80 to 120, but unfortunately our record of these days was accidentally thrown into the fire when cleaning up after the death of the child. She became progressively weaker and nourishment was poorly taken.

On the morning of the 28th the mother had just given her a little porridge and stepped aside to put the dishes away when the child choked and became cyanotic. In alarm, the child was carried across the street to the hospital where I was operating. I put my finger in the mouth and held the pharynx open. There were three feeble gasps for breath.

My diagnosis of poisoning by emetin is based on the following:

1. The history of a similar though lighter rash twice before when ipecacuanha was being taken.

2. There is no other way to account for the rash but by the drug. It was unlike any of the exanthemata, but was like the rash we see on those who have an idiosyncrasy for quinine—a drug rash.

3. The paralysis of the muscles of deglutition followed the neuritis due to the action of the drug and this paralysis was the immediate cause of death. There were no signs of neuritis in other portions of the body.

4. Other cases of neuritis following the administration of emetin have been known. To quote from a personal letter from Dr. Lee: "I agree with you that the cause of death was probably emetin poisoning. I am further urged to this opinion by my own attack of amoebic dysentery in September last, when large doses of emetin were used and this was followed by a marked multiple neuritis with altered sensation in the limbs, and trophic disturbances of the skin especially the skin of the palms of the hands." Perhaps this case was unfortunate in having the neuritis in the particular place where it occurred, and perhaps had it been in the extremities the child might have recovered.
5. The condition of the mucus membranes, the slight tenderness of the abdomen, and the character of the stools, show that there was an irritated condition of the digestive tract which is known to take place after toxic doses of ipecacuanha.

In the American Medical Journal, Vol. LXII, p. 504, Vedder, in answering the question "Have there been any ill effects following the emetin treatment?" quotes Baermann and Heinemann as follows: "When the subcutaneous dose was increased from 120 to 150 mg. (2 to 2 1/2 grains) in daily repeated injections, indisposition, weariness, and loss of appetite were experienced. These phenomena disappear in from 24 to 48 hours after the use of emetin."

Vedder quotes Sollmann with regard to ipecacuanha as follows: "Central symptoms make their appearance after large doses. Paralytic symptoms set in, among the earliest in mammals being vasomotor paralysis with fall of blood pressure. This is further aided by weakening of the heart-muscle due to its direct muscle action."

While he warns against the large doses recommended by Baermann and Heinemann as useless and possibly dangerous, he does not cite any case in which serious symptoms have occurred from too much emetin.

Perhaps this child was given more emetin than was justifiable, but it was slow in yielding to the treatment and did not yield till the larger doses were used. In all she was given 10 2/3 grains over a period of 21 days. I think that most of us are in the habit of pushing the drug till the disease yields to its action. We also know that the symptoms are not relieved so rapidly in an acute case as in an old chronic one, though the latter may be more prone to recurrence. The opinion of those more experienced in the use of emetin will be appreciated.

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UTILITY OF EMETINE IN VARIOUS DISEASES.


In the consideration of medical and surgical subjects, there is an unhealthy tendency to rush into print with our immatured conclusions. Especially is this the case when we have used either a new preparation of any drug, or a recently discovered "specific" for a certain disease, which happens to have been boomed in advertisement columns. Certain virtues are attributed to some drugs, which in many cases after due consideration and careful experimenting, are found wanting. We need only refer to the grossly exaggerated statements as to the use of Salvarsan. Thus it is with great hesitancy that I bring before the members of this Association the subject at the head of this short paper. For the past twelve months, or longer, I have been urged by
several medical men, who with myself have carefully watched cases of tubercular pulmonary haemoptysis, to publish the results of cases which have been treated in our hospital with emetine, but up to the present I have been sufficiently strong to resist their importunities.

It is now over two years since it occurred to me, that as emetine was undoubtedly a haemostatic, and also a specific in the treatment of amoebic dysentery, it should also act in the capacity of a haemostatic in pulmonary haemoptysis, whether it be tubercular, or of other origin. Although I searched in vain for literature upon the subject, yet I was conceited enough to think that my conclusions upon the subject provided a sufficient reason to put the matter to the test. First of all, I made sure of my subjects upon whom I intended to experiment, and all through the treatment has been applied only to those cases which by microscopical and physical examination have been diagnosed as suffering from definite tubercular pulmonary haemorrhage. Up to the present date, I have treated in the way which I shall describe, only twenty-three cases. Thirteen of them were, when admitted, either in extremis, or in a very advanced stage of phthisis of both lungs with haemoptysis. Six of the remaining cases had one lung extensively involved, whilst four others had but one side of the chest locally affected. I do not wish to burden you with the history, physical signs, and symptoms of each patient. I trust you will respect the diagnosis of those who examined the cases as phthisis is a disease with which you are all, unfortunately, too familiar in your clinics.

At first I commenced the treatment by injecting hypodermically, one third of a grain of emetine hydrochloride once a day, and was disappointed with the result. Then I increased the dose to one grain once a day, with very satisfactory sequences. In a few cases I injected one grain twice a day, but never more than that within twenty four hours. Generally after the first, certainly after the second injection, there was a marked arrest of haemorrhage. My method at this point has been to reduce the drug to two thirds of a grain, and then to a third, until the haemorrhage is completely arrested. Not one patient so far has needed, or received during the whole course of treatment, more than seven grains. It is a drug which must be used with caution and respect, else much harm will ensue.

Briefly, the results of the twenty three cases are as follows,—two died, one the day after admission, and the other after five days. In the case of the latter the haemoptysis, which had been very severe, had ceased, but he had been ill for months and sorely neglected. Five have been under personal and frequent observation since their dis-
Utility of Emetine in Various Diseases.

charge from hospital. The longest has been watched for eighteen and
the shortest for three months. Not one of them has had any recur­
rence of haemorrhage, and the areas of lung which were diseased have
completely consolidated. The remaining sixteen have not been seen
by me since their discharge or retirement from hospital.

My experience in treating this limited number of cases with
emetine is, that emetine does not only act as a haemostatic, but also
possesses some, to me, unknown properties of a recuperative character,
superior to any other drug which I have hitherto applied to such
cases. Whether it can be claimed as in any degree a specific for
phthisis, I am not prepared to say, but certainly, in the few cases
which I have treated and been able to keep under observation, the
examinations for tubercular bacilli which were positive at the com­
mencement of treatment, during the latest microscopical tests were
negative. Of course, in each case we did not neglect to treat the
patients under hygienic conditions, and the usual supply of good
wholesome food was given besides sedative drugs.

The first information which I received of emetine being experi­
mented with in the treatment of haemoptysis, was from an enterprising
traveller for an American drug firm, who happened to be in China on
business. Since then, I have found reference to it in both American
and British medical journals. So that the subject is receiving at­
tention in various parts of the world. It may be, that the services of
emetine will prove of therapeutic value in the treatment of such
diseases as gastro-intestinal haemorrhage, pneumonia, epistaxis, and
what is of greater importance to the members of the China Medical
Association, in the treatment of cholera and sprue. But of its use in
these diseases I am not yet qualified to speak.

As a practical outcome of this brief paper, I would suggest to the
members of this Association, that as opportunities arise, we carefully
and scientifically experiment with this drug, not only for pulmonary
haemorrhage, but also for the treatment of the other diseases which
I have mentioned.
NURSING REQUIREMENTS IN OUR MISSION HOSPITALS. *

Miss E. Hope Bell, Hankow.

This paper can but attempt to touch upon a few points of so large and varied a subject. It has to be borne in mind that what would apply in one locality in China, would not be suitable in another; there are hospitals large and hospitals small: those with ample funds, and those which carry on their work "from hand to mouth": those which are of recent construction, with many of the latest appliances, and equipment for up-to-date work, and others in adapted Chinese houses or inconvenient groups of buildings, which do not contain even the minimum of appliances or invalid requisites.

Since coming to China it has amazed me to find how much splendid healing of the sick has been accomplished in so many unsanitary and ill-equipped hospitals, with hardly any trained assistants, and my deep admiration has been aroused for the men and women who have laboured so long and so effectively under difficult conditions. But now-a-days some of these conditions can and must be bettered. Are we to be satisfied any longer with unskilled attendance for our patients when they might have intelligent nursing? Are you still content that ignorant amahs or illiterate coolies shall look after your serious cases during the hours in which you are caring for other patients?

The nursing equipment of our hospitals must depend upon what standard of nursing we mean to aim at, but in every hospital, whether in inconvenient quarters or in up-to-date buildings, if there is to be any efficient nursing of the patients, and any real teaching of the principles and art of nursing, there must be a fully trained nurse as matron. "Nurses can only be taught by nurses."

THE SUPERINTENDENT OF NURSES.

A great deal has been said about "the right kind of nurse for a mission hospital," and much criticism has been forthcoming when a lady has proved to be a square peg in a round hole. The peg herself, however, must not be blamed for this! Our Home Boards often fail to realise that hospitals are not at all alike in size or character of work, and that nurses are by no means alike either in training, individual ability, or preference for particular branches of the profession. There may be two vacancies on the field, and only one candidate, and she will be sent to the hospital which may need help the more urgently,

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* A paper read at the Biennial Conference, C.M.M.A., Shanghai, February, 1915.
without any reference to her professional suitability for the post. Or there may be one vacancy and one volunteer, and her appointment is made forthwith. It therefore comes about that one, who may have had exceptional experience in women's work, and to whom midwifery specially appeals, is sent to superintend and teach male nurses in a men's hospital. Or one who has no marked administrative ability may be sent to struggle with the problems which confront the pioneer matron in a men's hospital, whereas she could and would do excellent work in an already organised women's department if a transfer could be made. Because she is a square peg trying to fit a round hole, she may be regarded as a failure. For the work's sake, for the sake of her colleagues, and above all for her own sake, find a square hole for her!

It ought to be possible on the field for exchange of work to take place. A small peg may be sent to fill a very large hole, but with the hearty help and the sympathetic encouragement of her medical colleague, time will prove that she is in the right place. For there are great possibilities in the powers of adaptability in a human peg!

In the home lands a hospital matron has a staff of trained sisters and nurses, who all take some share in teaching the probationers, and she also has assistants available for help in the administrative work, and in the laundry and storeroom departments. In China, one foreign-trained lady is all a hospital can boast of, except in a few isolated instances. Therefore she needs to possess a good all-round experience in order to enable her to train her own assistants, to give the practical teaching necessary to her nurses, to supervise the servants, and to keep an eye on all departments which come under her control.

THE NURSING STAFF.

In China, until recently, doctors were satisfied to have their patients looked after by untrained attendants. "Assistants" or "students" rendered help in dispensing, in changing dressings, and in the operating room, but for the greater part of the time the patients were left in charge of coolies. A "sien-sheng" who could give an anesthetic thought it infra dig. to wash a bed-pau, or to give a patient a bath, and no "nursing" in the true sense of the word was done at all. Nowadays the "half-baked student" is disappearing, and our wards are being staffed with educated lads, the rougher and dirtier work of the hospital only being done by coolies. The transition stage has difficulties. Nurses are a new kind of being, unhonoured at present by public sentiment in China. The privilege and high calling of a sacrificial nurse's life do not appeal to the would-be hospital workers.
They all want to be doctors, and it will take determined and continuous effort to show them that it is equally noble to be efficient and skilful nurses, and that their efforts are the necessary complement to the doctor's work. The status of those taking up nursing work must be raised by all the means in our power. Our medical colleagues would greatly help if they would adopt the new term for probationer or pupil nurse, 護生, and that for certificated or graduate nurse, 護士. These terms are already in use in hospitals in eight or nine provinces. The Nurses' Association hopes that they may gradually become recognised by the nation as used to denote members of the second honourable "healing profession." To continue to speak of them as "the hospital servants," and to address them as 司夫, however little knowledge and ability they may at present possess, will not add any dignity to the workers. We must credit them with a little nursing instinct, and by example and teaching, aid them all we can. Let us show them that we think it a high and noble calling. Enthusiasm is known to be the most contagious thing under the sun!

The number of nurses and coolies necessary for any given number of beds cannot be suggested. It must depend on (1) the standard of nursing aimed at; (2) the standard of cleanliness required; (3) the arrangement of the buildings and wards; (4) funds available. If the expenditure on nursing is reduced to a minimum, it may be "economy at the expense of efficiency." The cost of cleaning, once fixed, can be kept stationary.

Regular off-duty hours should be arranged for the staff, preferably during daylight. The men work more steadily, willingly, and energetically, if this is done, and if the time-tables are rigidly adhered to the work will not suffer.

Extra nurses should be available if possible for "special" duty on serious cases needing individual attention, or for looking after delirious patients. These extra workers also meet the need which so often arises of taking the places of sick nurses, or of nurses on holiday. It is recognised now, in England and America, that those who are from morning to night, or vice versa, in the atmosphere of hospital wards, must have good sleeping quarters and the best of food. Too little attention is paid to this side of our Chinese nurses' lives. In far too many cases they occupy overcrowded bedrooms, with night and day staff interchanging as "Box and Cox," having no recreation room, and perhaps no dining place except the kitchen; and to comfort our consciences we say, "their accommodation is better than they would have in their own homes." The hospital compound is certainly less
odoriferous than their own streets, but in their houses they are not in hourly contact with sick people, nor are they working under such pressure. In building new hospitals, or in rearranging old ones, we should give careful thought to the building of suitable quarters for our nursing staff.

Chinese nurses cannot do long periods of night duty without risk to their health. Two months at a stretch in the cooler months and one month only during the heat of the summer is all that should be required of them. This plan, when followed, involves frequent rearrangement of the staff, but the better results achieved well repay the extra trouble taken.

A class room should be set apart for their use, where theoretical and other teaching can be given. Study hours should be definitely arranged, as the pupils cannot gain their theoretical knowledge in on-duty hours. Every hospital in the larger centres should become a training school for nurses, and should gradually be able to supply the smaller hospital and branch dispensaries with qualified workers. Theoretical teaching should be commenced from the very outset of a probationer’s training. The washing of bed-pans will become less irksome when the value of watching for and reporting abnormalities of faeces is realised. An extension apparatus will have the greater care, when the new comer understands the reason why the foreign barbarian attaches a tin of shot or sand to a painful leg. A typhoid patient will be turned in bed more gently, if the nurses are taught the dangers of handling him roughly. In this way intelligent and skilful nurses will gradually take the place of the ignorant attendants of the old days. The gain to the patients themselves in a more speedy recovery will be obvious, and the accompanying relief to the doctor’s mind, in being able to trust his patients to the care of a competent nursing staff without fear of disaster, need not be enlarged upon.

ARRANGEMENT OF THE PATIENTS.

A careful arrangement of the patients will greatly facilitate the nursing being carried on more satisfactorily. Inconvenient buildings in a good many hospitals prevent ideal accommodation, but surgical and medical patients are still seen together in the same ward in some hospitals. If cases needing frequent surgical dressing are put with medical cases requiring constant attention and careful nursing treatment, all cannot be looked after properly, even with the most conscientious nurses in charge. The work is made doubly difficult, and someone or something is nearly certain to be neglected. The necessary
macintoshes, bowls, and dressings will probably have to be borrowed from a surgical ward, as these surgically clean things are not usually found in a medical ward, nor should their preparation be part of the routine work of such a ward. Eye cases should be nursed separately wherever possible. More care can then be given in looking after them, and a staff nurse cannot say that he “had no time to attend to a hot air bath because there were so many eyes to dress,” and eye cases will not have to wait whilst serious medical patients close by are attended to.

A word must be said about the overcrowding of our wards. Our first aim in mission hospitals is to seek to bring healing to the souls of our patients. To that end we have aimed at “quantity” rather than “quality” in pursuing our work, and our wards have been crammed to overflowing. “Quantity” can surely still be the aim in the outpatient work, the whole department being carried on as efficiently as possible. But “quality” must be the object of the in-patient work. Perhaps 25 patients are taken into a block containing 20 beds: the doctors cannot have more time to devote to talk to individual patients, when their professional work is thus increased 25%; nor are the nurses likely to be examples of untiring patience and kindliness, under the extra pressure. Must we still allow patients to be placed on forms or other improvised bedsteads, on the ward floors, or placed “sardine fashion,” two in one bed? Such overcrowding is unhygienic to say the least, and surely our hospitals are not merely a collection of rooms in which patients may be housed: are they not also schools for training men in character, and fitting them for a most important life-work? Temperatures falsely charted without being “taken,” other duties unperformed, misuse or appropriation of materials,—these, and similar acts of untrustworthiness, have been observed in overcrowded wards. Punctuality, systematic observation, and accuracy in detail cannot possibly be taught or learned under such conditions, and we believe that, apart from the professional side, such qualities can aid in the upbuilding of character. In every hospital which is a training school for nurses, “quality” should most certainly be the aim of our in-patient work.

WARD FURNITURE AND UTENSILS.

There should be no unnecessary furniture in the wards, and nothing which requires extra attention in the way of cleaning, such as glass tables and brasses. Cupboards, tables, chairs should be of the simplest make, with no ledges or crevices for harbouring dust. Bedsteads should undoubtedly be of iron, with rounded parts, and no
ornamentation which makes dusting more difficult. The respective merits and demerits of wire springs versus well-painted smooth boards is a much discussed question. In some districts the wire springs rust very quickly in spite of constant care, but plain boards are found satisfactory, with frequent scrubbing and regular supervision. A couple of iron bed-pulleys in each ward are a great help in the nursing of heavy cases.

Each ward should be supplied with screens, having washable covers, so that everything may be done “decently” as well as “in order”.

Ward utensils in use are chiefly enamel ware, but the constant danger of chipping makes them not ideal. Earthenware porringer and bedpans are to be preferred, but the danger of frequent breakages, the difficulty of replacing them quickly, and the heavy freight and customs charges, make them a heavy item of expenditure in a Chinese hospital. Small china sputum cups with lids can be bought cheaply on the native street. Kidney trays of papier maché are not easily broken, and are readily cleaned, as also is a certain kind of brass tray (Japanese), which needs only boiling water and “elbow grease” to keep it polished. Feeding cups should be of china, without strainers in the spouts.

WARD SERVICE ROOMS.

A crying need in most of our hospitals is for ward service rooms, and no new building in the future should be without them. The preparation of the present operating room may be as nearly perfect as can be desired, but where and how are the ward dressing-bowls washed? Are they ever sterilised? Where and how are the macintoshes cleansed and prepared for the next patient? If these things are neglected, there can be no satisfactory results from the scientific cleanliness of the operating room. Until such a time as funds permit of buying foreign sinks, useful ones can be made of wood, zinc-lined and painted. A boiler for dressing bowls can be procured on the native street for a few hundred cash. Those who themselves have had to wash 20 or 30 sputum mugs at a time, or cleanse an equal number of bed-pans in a day, realise that some conveniences must be devised to help the probationers in this necessary and unpleasant piece of work, particularly in China, where such work is despised. If the latrine is at the other end of a large compound, and only there any convenience for washing them, it is certain that there will not always be the necessary cleansing and disinfecting of these
utensils. In new hospitals, a small sink-room attached to each block of wards on each floor, having a fresh air disconnection, would better meet the need of the patients, and help the nurses considerably. Service rooms should be arranged for each block of wards. These would give facilities, amongst other things, for the preparation of invalid articles of diet and special foods which cannot be made in the general kitchen. Cupboards for bedding, clothes, and all nursing appliances and requisites should not be far from the ward. Patients should of course all wear hospital clothes, and racks under lock and key are desirable for stowing away patients' own clothes during their residence in hospital.

BEDDING. AND LINEN.

Washable covers filled with bamboo shavings make firm mattresses and are preferable to those filled with straw, but are more expensive. Pillows can be stuffed with rice husk or sawdust, and, if the hospital possesses a fumigating apparatus, feather pillows can be used. It is a mistake to think that Chinese patients prefer little hard pillows: they much appreciate softer and larger ones. Bottom sheets and draw sheets are necessary; if no method of fumigation is available, washable blankets can be used inside the "pei-wo" covers in place of the usual cotton wool. The annual expenditure on linen and clothing depends upon the standard of cleanliness which is aimed at. By methodical buying, such expenditure can be fairly regulated to an annual average. Various items need renewal every two years, others every three, and so on, and by planning carefully it should be possible in a year of comparatively light expenses to buy ahead for the next year which may call for a heavier outlay.

LAUNDRY.

Hospitals in country places in all probability have to undertake their own washing: city institutions find their laundry expenses much lessened if all washing is arranged for on the premises. Not only is this method cheaper than sending to an outside laundry, but there is more prompt return, the real boiling of the articles is assured, and there is much less tearing of clothes, therefore the mending bill is smaller. A wash-house and a good drying room are necessary, as well as drying ground, and if some good friend of the hospital could be persuaded to give a "Vowel" washing and mangling machine (or a machine of any other good make), much labour would be saved.
NURSING AND CONVALESCENT REQUISITES.

These things are too numerous to mention, but should include, as funds allow, such things as water cushions, air pillows, and the hundred and one items which every trained nurse knows go so far in the way of helping to make patients comfortable. Bed-rests and foot-supports and many other things can be made quite cheaply by native workmen. A wheel chair, and one or two easy chairs will be found preferable, and be more comfortable than small forms, for patients on first getting up after serious illnesses. Up-to-date apparatus will not, however, cause patients to be better nursed. Past failure in this respect has not been through want of suitable appliances, but because of lack of trained helpers, and because of low ideals. « Not failure, but low aim is crime." Each doctor and every superintendent of nurses should aspire to be at the head of the best nursing staff in this great Republic! «If the buildings of a hospital are bad, if the fittings and furniture are obsolete and insufficient, energy and money can put them right. But whether the nursing is good or bad, depends on the character of each worker in it." Skilful and willing hands are needed, but what is more important, a spirit of self-sacrifice and self-forgetfulness must inspire each worker, if the nursing is to be of the very best. Day by day the sick folk in the wards hear the Gospel, but they should also see it carried out in the lives and characters of the men who wait upon them and tend them. The foreigners may preach the doctrine, and attend to their bodily needs, but it is the nurses by whom they judge the value of the doctrine. What difference has it made in the lives of these their fellow-countrymen? Are they gentle? What is their behaviour to each other? How do they treat a grumbling or a tiresome patient? How do they meet emergencies? The nursing staff should be encouraged to attend the ward services, and special Bible-classes should be arranged for them. The possibilities in hospital would be tremendous if every member of the staff was a keen, earnest Christian.

"To-morrow's strength is very largely the heritage of to-day's patient striving," and if we can constantly remember this fact, we shall be encouraged to sustained effort. "Every effort to attain further progress is so thoroughly worth while."

"All we have done, or nobly failed in doing,
All we have been or bravely striven to be,
Makes for our gain, within us still surviving,
As power and larger possibility."

[Note:—We regret that, as the secretary's notes have been lost, we cannot give the report of the interesting discussion which followed the reading of this paper.—Editor.]
A NOTE ON THE TREATMENT OF CUTANEOUS ANTHRAX.


During the past sixteen months it has fallen to the writer to treat eighteen consecutive cases of Malignant Pustule without a death.

The patients, with two exceptions, were all infected at their work in the horse-hair factories of the town. Of the two exceptions, one was a telegraph messenger, in whom the infection could not be traced: the other was the wife of a worker, though she herself had never been to the godown. Of the rest, all but one were employees of one firm. This preponderance, however, might be due to the orders given by the manager to report to him any case of disease among the hands.

There is a large export of pigs' bristles and horse hair from Newchwang to Europe and the States. The infection in all cases traced appeared to be due to horse hair. The raw material was bought in Moukden, a centre which draws from many sources. It consists of horses' tails, which are cleaned and sorted into bundles by hand. Most local foreign firms attempt to disinfect this raw material, which arrives in a filthy condition.

Of the cases, all but the one noted above were men. The majority of lesions were on the face or neck: two were on the leg, one on the body, and three on the arms. One man had three pustules: one had two pustules: the rest one only.

The general history given was of a small pimple which itched and which they scratched. There was headache, giddiness, and more or less malaise, fever, and sleeplessness.

The treatment adopted was to inject 5% carbolic solution around the pustule, together with fomentations of ipecacuanha. The pustule was surrounded, at a distance of say half an inch, with a ring of hypodermic injections deep into the subcutaneous tissue, each of a few drops of the carbolic solution, using 40-80 minims in all. This was repeated each day for three or four days. A fomentation of ipecacuanha powder, about one drachm moistened with a little warm water, was then applied and covered with oil silk. This was renewed daily until the black slough began to separate, after which wet boracic dressings were used to expedite healing. In one case the pustule was excised, but did no better than those not operated on, and the scar was larger.

The anthrax "pustule" is too well known to require description. In this series some cases came when the lesion was only a clear vesicle,
with a red areola more or less marked. In others, the vesicle or vesicles contained a dark red or brownish serum. There is no pus, in spite of the name. When the pustule was three or four days old, it was characteristically black or dark brown, usually with satellite vesicles also dark in colour. Usually after this date the vesicle ruptures and dries, leaving a tough depressed black eschar, generally margined with a ring of vesicles. Even in early cases there was a browny swelling of the skin, and in later cases the oedema was widespread and severe. One man with anthrax just at the outer margin of the left orbit presented a striking picture. Both eyes were hugely puffed and closed, his cheeks blown out till he could scarcely open his mouth, and his neck was as large as his head. The neighbouring glands enlarge early, even before the pustule is typically developed. A small pimple no bigger than a pin's head, and glands as large as a walnut, should at once lead to suspicion. Headache and giddiness were usually marked, but there was little local pain. Under the treatment secondary symptoms were slight, the highest temperature noted was F. 102.5°. All the cases examined—that is all but two or three whose clinical appearance was unmistakeable—showed the anthrax bacillus.

The average mortality of cutaneous anthrax is given as about 24%.* It is possible that the absence of deaths in this series may be due to a relative racial immunity, not to the treatment. Against this, the workers themselves know and dread the disease, and I have myself seen one death and heard of others. This death occurred before I read of the success of Muskett in South Africa with the ipecacuanha treatment; moreover, one patient who received only carbolic injections was worse next day, but improved immediately on applying the ipecacuanha.

As the horse-hair workers all sit together in large rooms filled with dust from the hair, it is curious that I have so far come across no lung anthrax. Probably, however, respiratory infection would be too severe and rapid to reach hospital. A report in the London Times some months since, of an inquest on a man who died in Whitechapel of pulmonary anthrax contracted while opening bales of horsehair received from North China, shows that the contagion is virulent enough.

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* Allbutt, System of Medicine, Vol. II, part I, 252.
Text Book of Anatomy and Physiology for Training Schools, and other Educational Institutions, by Elizabeth R. Bundy, M.D., Member of the Medical Staff of the Women's Hospital of Philadelphia, etc. Third Edition, revised and enlarged. With 233 illustrations. Philadelphia, P. Blakiston's Son & Co.

Bundy's Anatomy and Physiology should fill a long felt want of students and nurses, as without including too much detail it contains a comprehensive description of the structure and functions of the body.

The chapters on metabolism and the nervous system are remarkable for clearness and instructive value. The clinical notes at the end of important chapters should be most helpful in impressing facts on the student's mind.

The book may be commended for translation into Chinese.

E. S. C.


This is a good little book of its kind. It is, of course, well for any one to possess the knowledge it imparts, but at the same time the author has gone to a great deal of unnecessary work in order to make a book of it. For instance, I do not think the amateur is likely to be called upon to render first aid to diseases such as pyorrhoea, or syphilitic lesions of the mouth, for, as we know, such diseases do not require much first-aid treatment, but an effective and permanent treatment from start to finish in order to do any good at all.

All the first aid dentistry that would be required of any one is covered in chapters six, seven, eight and nine; that is, the information necessary to diagnose the different kinds of toothaches and to apply the remedies for them. Failing with this, of course, there is nothing left to do but apply the remedy as pointed out in chapter thirteen as the last resort.

F. A. R.
The China Medical Journal.

Vol. XXIX.  MAY, 1915.  No. 3.

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

All changes of address, departures and arrivals from furlough should be notified to Dr. J. A. Snell, Soochow, China. Members are requested to invite new comers to join the Association.

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

Editorial.

THE ROCKEFELLER FOUNDATION AND ITS BENEFACIONS.

In a recent editorial commenting on the proceedings of the Shanghai Conference which had just been held, the hope was expressed that our medical schools would be allowed to work out quietly their own salvation on the lines laid down by the report of the Curriculum Committee, as adopted by the Conference. This meant that for a long time to come our schools were expected to plod quietly along, with insufficient staffs and inadequate equipment, doing their best and trying to remedy deficiencies as much as possible until better days dawned. Events are proving better than our expectations. If the recommendations of the Rockefeller Foundation Commission are made effective, then our medical schools will be placed almost immediately in a state of high efficiency, and our hospitals will be greatly strengthened. We shrink from using the over-worked term "epoch-making", but certainly the work of medical missions in China has now entered upon a new period of development.

Although it will occupy much space, a detailed statement concerning the various Rockefeller benefactions is here given, as it will doubtless prove very interesting to members of the Association. In the first place, the Rockefeller Foundation is only one of several "Boards" organised by Mr. Rockefeller. The full list is as follows:-

The General Education Board.
The International Health Commission.  (Formerly, the Rockefeller Sanitary Commission.)
The Rockefeller Foundation.
The China Medical Board.  (Maintained by the Rockefeller Foundation.)
The Rockefeller Institute for Medical Research.
The Board of Scientific Directors of the Rockefeller Institute.
The Rockefeller Institute for Medical Research was founded in 1901. As stated in its charter, "the objects of said corporation shall be to conduct, assist, and encourage investigations in the sciences and arts of hygiene, medicine and surgery, and allied subjects, in the nature and causes of disease and the methods of its prevention and treatment, and to make knowledge relating to these various subjects available for the protection of the health of the public and the improved treatment of disease and injury. It shall be within the purposes of said corporation to use any means to these ends, which from time to time shall seem to it expedient, including research, publication, education, the establishment and maintenance of charitable or benevolent activities, agencies, or institutions appropriate thereto, and the aid of any other such activities, agencies, or institutions already established or which may hereafter be established." In lands, buildings, equipment, and endowments, the institute has received property to the value of several million dollars.

The General Education Board was founded twelve years ago. It has just issued the first full report of its activities. To this Board, Mr. Rockefeller has paid fifty-three million dollars, of which nearly twenty-five millions of principal and accrued income were bestowed upon the University of Chicago, and the Rockefeller Institute for Medical Research. At present, in addition to a fund of $200,000 given by the late Anna T. Jeannes of Philadelphia, the Board possesses very nearly forty million dollars, which yield an income of $2,417,079.26. Up to June, 1914, it had distributed $15,894,364.89, at the cost in administration expense of only $304,794.99. To American colleges and universities $10,582,591.80 has been paid. It has also aided medical schools, miscellaneous schools, and negro institutions. Towards farm demonstrations, and the organisation of boys' and girls' clubs, it has expended nearly a million dollars. The support of professors of secondary education, of rural school agents, and of a rural organisation service, called for other large sums. The three main features of the college policy of the General Education Board are:—preference for locations in centres of wealth and population, systematic and helpful co-operation with religious denominations, and the concentration of gifts in the form of endowments.

The Rockefeller Foundation was incorporated under the laws of the United States in 1913. Its purpose, as stated in its charter, is that "of receiving and maintaining a fund or funds and applying the income and the principal thereof to promote the well-being of mankind throughout the world." According to a public statement, Mr. Rockefeller gave $100,000,000, in stocks and bonds, to the Foundation in March last. Whether this simply rounds out, or is additional to previous endowments, we cannot say. Under a provision of the deed of gift to the Foundation, it is provided that from its income, "$2,000,000 annually should be applied to such specific objects within the corporate purposes of the Foundation as Mr. Rockefeller might direct." The China Medical Board, which intends to aid our medical schools and hospitals, is maintained by the Rockefeller Foundation.

The following statement of the disbursements of the Foundation is taken from its Report to the United States Commission on Industrial Relations, and is inserted to show the very wide range of the Rockefeller gifts.

The Foundation has, up to January 1st, 1915, made disbursements for its own work and the activities conducted under its own immediate supervision as follows:
<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stipends for Belgian professors to continue scientific studies in England</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>Food supplies for Belgium</td>
<td>$975,707.93</td>
</tr>
<tr>
<td>Administrative expenses</td>
<td>$8,995.13</td>
</tr>
<tr>
<td>Hookworm work in Central America, British Guiana, British West Indies and Egypt</td>
<td>$142,467.76</td>
</tr>
<tr>
<td>Investigation of industrial relations, salaries, traveling expenses, etc.</td>
<td>$5,292.13</td>
</tr>
<tr>
<td>Medical work in China</td>
<td>$39,270.92</td>
</tr>
<tr>
<td>Purchase bird refuge in Louisiana</td>
<td>$223,574.77</td>
</tr>
</tbody>
</table>

Total, $1,420,218.64

The following is a complete list of the other gifts and pledges made by the Foundation since its establishment and up to February 1st, 1915:

- American Academy in Rome: $100,000
- Red Cross, for relief of suffering in Bulgaria: $10,000
- To Relief Society for the Calamities in Northeastern Districts of Japan: $10,000
- For carrying out program of co-operation and co-ordination in work of principal American mission boards: $450,000
- Bureau of Municipal Research: $30,000
- To American Association for Conservation of Vision, toward budget of New York Committee for the Prevention of Blindness: $25,000
- Wellesley College: $750,000
- For sending Red Cross physicians and nurses to Europe: $10,000
- To Dr. Alexis Carrel for use under his direction for relief of sick and wounded during war in Europe: $10,000
- New York Association for Improving the Condition of the Poor, for widows’ pensions: $200,000
- New York Milk Committee: $5,000
- Bureau of Municipal Research, for State Government studies preparatory to Constitutional Convention: $10,000
- Association for Improving the Condition of the Poor, for relief of distress due to war and industrial depression: $25,000
- Charity Organization Society, same purpose: $10,000
- Brooklyn Bureau of Charities, same purpose: $10,000
- Towards the Memorial Building of the Red Cross at Washington: $100,000
- Towards diagnostic work of Health Department, New York City: $8,840
- To Y. M. C. A.: $414,000
- To Y. W. C. A.: $10,000
- To various organizations of the Baptist Church: $101,200
- For the relief of distress following the fire at Salem, Mass.: $10,000
- For the relief of the victims of the Newfoundland sealing disaster: $1,000
- To charitable organizations in various cities: $54,950
- To Public Health Associations: $17,500
- To miscellaneous organizations such as the Public Schools Athletic League, the Social Service Summer School of the Blue Ridge Association, the Boy Scouts of America, the National Highways Protective Association, the George Junior Republic, the Legal Aid Society, the Honest Ballot Association, the Prison Association of New York, the Religious Education Association, the Laymen’s Missionary Movement and the Federal Council of Churches: $23,150
- To the Rockefeller Institute for Medical Research: $2,550,000
AT a meeting of the Rockefeller Foundation in January, 1914, it was voted to establish a commission to study and report on the condition of medical education, hospitals, and public health in China. In accordance with this vote, the Foundation appointed the following persons to constitute the Commission:

Harry Pratt Judson, LL.D., President of the University of Chicago. Trustee of the Rockefeller Foundation, Member of the General Education Board, etc., Chairman.

Roger Sherman Greene, A. M., Consul-General of the United States of America at Hankow.

Francis Weld Peabody, M.D., of Harvard University, and the Peter Bent Brigham Hospital, Boston.

George Baldwin McKibbin, J. D., Secretary to the Commission.

During the course of its investigations, the Commission visited seventeen medical schools and ninety-seven hospitals in China and Manila. Of the nine mission medical schools in the list of the Medical Missionary Association, seven were visited, the only ones omitted being Moukden in Manchuria, and Chengtu in Szechuan. Visits were also made to various universities and secondary schools, both missionary and governmental. Conferences were held with a great number of medical missionaries and officials of the Y.M.C.A., in China, with leading officials of the central government and of the governments of the various provinces, and with many other persons in positions of influence, both European and Chinese. Of the eighteen provinces of China proper the Commission visited eleven. The Report states that everywhere they were received with great courtesy and with great helpfulness.

The Commission has now issued its Report, which is voluminous and well-illustrated. The subjects are covered in the following order: I. Health conditions in China. II. Chinese native medicine and surgery. III. Western medicine in China, with sub-chapters on Practitioners of Western methods; Chinese Government and private medical schools; Education of Women Physicians; Non-missionary medical schools under foreign control; Locations considered for medical education; Hospitals in China. IV. Standards of medical education under missionary auspices; teaching in Chinese or in English. V. Dissection and autopsies. VI. The attitude of the Chinese towards Western medicine. VII. Recommendations of the Commission. Appendixes.
Everyone may not agree with everything in the Report, but all must admit that it is very fair-minded and thorough, and the recommendation "that the Foundation as far as possible should co-operate with existing missionary institutions," must be very gratifying to members of the Association.

In the light of the facts as gathered by the Commission the following recommendations are made to the Rockefeller Foundation:

**Medical Work in China.**

That the Foundation should undertake medical work in China. In the opinion of the Commission the need is great beyond any of their anticipations and the opportunities for progress in all lines are equally great.

**Co-operation with Missionary Institutions.**

That the Foundation so far as possible should co-operate with existing missionary institutions which have already done such good work in China.

**High Standard for Medical Instruction.**

That medical instruction in which the Foundation is concerned should be on the highest practicable standard. Such standard at the present time seems to include as a requirement for admission to a medical school the training of a middle school (roughly equivalent to an American High School) supplemented by two years of pre-medical work devoted to instruction primarily in English, Chinese, physics, chemistry, and biology.

**English as the Principal Medium of Instruction.**

That the teaching in medical schools in which the Foundation is concerned for the present and for some time to come should be in English as the main language. A part of the instruction might be in Chinese, and it might be possible in most classes to have explanations given in Chinese.

**Public Health—Time not ripe for large work by Foundation.**

That on account of the lack of suitably trained men, and for other reasons, the time is not yet ripe for the Foundation to assist in the organization of a large work in relation to public health.

**An Independent Institution for Research not Recommended.**

That it is not advisable at this time to establish an independent institution for research in China, but that research be encouraged in connection with the medical schools aided.

**Medical School at Peking.**

That the first medical educational work organized should be in the city of Peking, and that it be in connection with the Union Medical College if suitable arrangements can be made.

**Medical School at Shanghai.**

That on account of the population, wealth, and convenience of location of the city of Shanghai, the second medical work of the Foundation be established in that city.

In the opinion of the Commission, it is unfortunate that there should be in Shanghai two competing medical schools, both under American auspices and both teaching in the English language.
It also seems to the Commission much wiser that well supported schools of medicine should not be undertaken both in Shanghai and in Nanking. One strong institution in the lower Yangtze Valley would be better, and the better place for such institution is in the larger city.

The Commission therefore recommends:

1. That there be established at Shanghai a new institution, perhaps chartered under the laws of the State of New York, to be known as the Shanghai Medical College or by some other name acceptable to the various interests concerned.

2. That provision be made for co-operation with existing medical schools in and near Shanghai on such basis as would be advantageous to the co-operating schools, and would unite the medical educational forces and the principal hospitals of the entire lower Yangtze Valley contributory to Shanghai.

The Commission hopes that the above plan will make it possible to unite all the medical forces in the vicinity of Shanghai, in medical education of a high grade in order to secure the advantages of union, while at the same time leaving to each co-operating institution its entire autonomy. A special advantage to the united institution will lie in making it possible to have proper arrangements with the various missionary secondary schools and further with the various missionary hospitals in the territory. On the other side, the advantages to the co-operating institutions will lie in being connected with an institution financially strong, and therefore permanent in character and situated in a city which will afford the greatest amount of clinical material and probably the most substantial support among the Chinese.

Medical Education at Canton.

That assistance should be given to the plans of the Canton Christian College for medical education. The particular form of such aid cannot be determined at this time on account of some pending questions with reference to the Canton Hospital.

Medical Education at Changsha.

That aid be given to the medical plans of the Yale Mission at Changsha. In the opinion of the Commission it is advisable to put such aid in a form which will be likely to stimulate the interest and support of the Hunanese.

Model Tuberculosis Hospitals.

That two model tuberculosis hospitals be established in China and that expert advice be secured as to location and organization. Kuling in the Yangtze Valley and the Western Hills between Peking and Paotingfu are tentatively suggested as possible locations. Our attention was called in all parts of China to the overwhelming prevalence of tuberculosis. It has become especially common among the student classes. Plans for a sanitarium situated near Peking are already being formulated.

Scholarships.

That in connection with the medical schools aided provision be made for a limited number of scholarships in order to encourage selected young men who have no sufficient financial means to pursue the study of medicine. It is suggested that ten be offered for the year 1915-16, and ten additional yearly until the total number reaches fifty. The expense will be $750 in the first year and $3,750 in the fifth year and thereafter.

The Development of Hospitals.

That hospitals be developed first of all in the fields tributary to the medical schools which may be aided by the Foundation. Aid may be given to other hospitals as circumstances may warrant.
The following suggestions are submitted:

Increasing the Staff of Foreign Doctors.—That the Foundation offer to pay the salaries of additional foreign medical men selected by the Missions and subsequently approved in each individual case by the Foundation. These doctors should be sent only to hospitals already established, so that they would be additional members of the hospital staff. This system would put the task of finding medical men on the Missions, but would solve the question of the lack of medical men in so far as it depends on the lack of money for salaries. It would also prepare more hospitals to be proper institutions for the clinical training of medical school graduates.

Provision for the Salaries of Chinese Doctors in Hospitals.—These men should be graduates of schools recognized by the Rockefeller Foundation and their appointment should be subject to the approval of the representative of the Foundation in China.

The provision of salaries for the Chinese would be of direct value in two ways: on the one hand, it would help to give the hospitals more efficient staffing; on the other hand, it would provide opportunities for a considerable number of Chinese graduates to continue hospital work for a series of years. Some of these men might give their full time to the hospital, and some perhaps half time. It is of great importance that Chinese graduates be kept in touch with hospitals, so that their standard of work will not deteriorate. By this means they will be constantly under the supervision of trained foreign physicians.

Provision of Salaries for Foreign Nurses.—That the Foundation support a considerable number of foreign nurses in hospital work. These nurses should be nominated by the Missions, and subsequently approved by the Rockefeller Foundation. The attempt should be made to have them sent, first of all, to the better-equipped and better-staffed hospitals. The lack of nurses would thus be met, in so far as it depends on the lack of money on the part of the Missions.

Equipment.—It is impossible to undertake to provide suitable equipment for even a small proportion of the hospitals in China. However it would be most important to increase the equipment of certain hospitals and more especially those which can be brought into line with the medical schools, which may be aided by the Foundation and of those hospitals which have an adequate medical and nursing staff. It is, of course, quite unnecessary to provide much increased equipment for a hospital which has only one doctor.

A Resident Commissioner in China.

That the Foundation be represented in China by a resident commissioner, who will administer the affairs of the Foundation in connection with the institutions aided. He will make regular reports and recommendations. The commissioner should have a suitable staff. Peking should be his headquarters.

Tsiananfu.

Tsiananfu is the capital of Shantung province and is said to have a population of about 100,000. The Union Medical College there, like that at Mukden, is essentially a provincial institution, and while Shantung is one of the important provinces of China with a very numerous and industrious population, and with a history of which its people are justly proud, in view of the resources available the subsidizing of a medical school there does not seem justifiable at present. The Missions which support this school, the American Presbyterian and the English Baptist, would do better to turn their students to Peking. As at Mukden a very creditable beginning has been made, but its staff and equipment are inadequate, and there is grave doubt whether a sufficient number of teachers can be secured.
To carry out the plans of the Rockefeller Foundation for the support and development of medical education and hospital work in China, the "China Medical Board" has been formed. Its officers are:—John D. Rockefeller, Jr., Chairman; Wallace Buttrick, Director; Roger S. Greene, Resident Director in China; Eben C. Sage, Secretary.

The full list of members of the Board is as follows:—Wallace Buttrick, Simon Flexner, Frederick T. Gates, Frank J. Goodnow, Jerome D. Greene, Harry Pratt Judson, John R. Mott, Starr J. Murphy, Francis W. Peabody, John D. Rockefeller, Jr., Wickliffe Rose, William H. Welch.

When so much is promised it may seem that to ask for more is hardly a becoming attitude. Yet there are two directions in which we think the Commission might wisely have extended its recommendations.

First, there is a strong demand for medical schools in which the Chinese can acquire a thorough knowledge of Western medicine and surgery through the medium of their own language. It is admitted that the Chinese language is quite adequate for this purpose, and the standard of the medical education given by means of it can be just as high as that of medical schools in which other languages are the medium of instruction. Sooner or later, such schools teaching in Chinese must be established, as the Chinese will not always be content to receive professional education solely through the medium of a foreign language. If at least one such school were established now by the China Medical Board, with a staff and equipment equal to that of the other schools it proposes to establish, it would meet this demand to a very great extent, would tend to unify the whole bi-lingual system of medical education, and would render unnecessary the continued existence of some of the schools which are now bravely struggling to meet the demand, but are almost hopelessly handicapped because of insufficient staffs and inadequate equipment. Moreover, this school might well become a centre of literary activity in the work of translating foreign medical books and papers, issuing medical periodicals and magazines in the native language, helping to form a standard medical vocabulary and phraseology in Chinese, and in various other ways contributing to the advancement of medical education in China by giving the Chinese a medical literature of their own. On the whole, probably no other institution could do so much towards laying well and truly the foundations of medical
education in China. At a recent meeting of the Executive Committee and the Council on Medical Education of the China Medical Association, this subject was fully discussed, and the following resolution was passed unanimously: "Resolved:—That we strongly urge upon the China Medical Board to establish or help support at least one medical college teaching in Chinese, and that we express our belief that under present circumstances the school most suitable for development is that at Tsinanfu."

Next, we cannot but regret that nothing is to be done for the medical education of Chinese women. Social laws and customs concerning women are far less free in the Orient than in the West, which makes it highly desirable that girls and women shall be attended medically by members of their own sex, especially in obstetrical and gynecological cases. In India the number of male medical missionaries is 123, whereas the number of lady medical missionaries is 225. The Commission has carefully considered the subject, and reports that the greatest difficulty is the inability to get a sufficient number of girls with the proper preliminary education. But if it were definitely announced that at some time in the future a Medical College for Women would be established, the announcement would give a great stimulus to the higher education of girls, and this preliminary difficulty might be solved very speedily.

We pass now to criticisms of a more general kind. Of course in a scheme of this magnitude, embracing numerous and diverse organizations, many difficult questions may arise, but there appear to be two only which are serious, and these may as well be frankly faced.

In the first place, there is the fear that the acceptance of large benefactions, whatever the source or the object may be, tends to fetter the freedom of thought and speech of the beneficiaries. For us in China the fear appears to be groundless. As to freedom of thought and activity in medicine, the scientific work of the Rockefeller Institute for Medical Research, and the practical grappling with the national menace of unciniarisis in the United States, are guarantees that so
far from our medical work being restricted, every encouragement will be given to make it of the highest and broadest kind. As to economic doctrines, few of us have sufficient interest in the matter to care to depart from the beaten track. We are here mainly to propagate Christianity, and are content to leave the Chinese to work out its social principles for themselves. One of our members, to be sure, is an enthusiast over a particular theory as to the ownership of land, but no one would dream of suppressing him. A graver issue would be raised if there was any probability of the restriction of religious teaching and activity. As missionary organizations we could not surrender the raison d'être of our existence for the sake of getting help to do work of a secondary kind. But we see no ground for this fear. In the Recommendations it is distinctly stated "that the Foundation, as far as possible, should co-operate with existing missionary institutions which have already done such good work in China." The physicians which the Foundation will support are to be appointed by the missionary societies. And nothing can surpass in generosity and sympathy with mission work, the arrangements which will probably be made by the Foundation with the Union Medical School, Peking. In this connection we venture to express the hope that all the medical schools established by the Foundation in China will practically be on a Christian basis. It may not be desirable that doctrinal and other religious tests shall be imposed, but we do hope that the trustees and professors will be men in sympathy with Christian ideals.

The other question concerns the home churches. What will be the effect upon the spiritual life of the church at large of the acceptance of large gifts and endowments for missionary enterprises? This is a question, be it observed, which has nothing to do with the faith or character of anyone, but applies to all large gifts, whatever the source may be. It is urged with strong conviction, and in the most unexpected quarters, that in the long run such benefactions lessen the interest of the people at home in missions, and with contracted spiritual vision there follows spiritual atrophy. A self-sacrificing working church is a live church; a church in which all responsibilities are allowed to rest upon a few rich men or organizations, is perilously near being a dead church.
There is much force in this argument, but we doubt its immediate applicability to the granting of aid to medical schools and hospitals. It must be borne in mind that the Foundation is thoroughly business-like in its proceedings. It embarks in no useless enterprises, nor does it indulge in extravagances. When it states that money, however large the amount may be, is needed for a particular purpose, the money really is needed. When it proposes to give a large amount of money to place our medical schools and hospitals in a position where they can do their work thoroughly and well and with the security of permanence, that money is needed, every penny of it. What prospect is there of the churches at home granting aid on this scale? None; not from unwillingness, but from sheer inability to obtain the money from the churches. And there is no sign that in the immediate future the outlook may change. The medical schools are struggling for existence, and their collapse, or continued existence in a deplorable state of weakness, cannot be much of an inspiration to the home churches.

On the other hand, relieved of a hopeless financial burden, the churches will have greater freedom and ability to meet the needs of other departments of missionary work, evangelical, literary, and educational, and will be stimulated to fresh endeavor to bring all branches to the same high degree of efficiency as the medical. Not only so, but advantage can be taken of opportunities to venture upon new fields of activity. The interests and activities of missionaries will not be in the least diminished by this liberal aid to medical work but rather increased. As stated previously, over ten million dollars were given to American colleges and universities by the General Education Board, usually on condition that each aided institution raised a large additional amount elsewhere. So far from paralysing educational work, this disbursement of over ten million dollars has been the means of obtaining from other benefactors an additional forty million dollars. Why then should we fear that the home churches will fall into a state of apathy owing to the Rockefeller benefactions? Why not hopefully believe that the opposite will happen, that they will be stirred to greater enthusiasm? When we observe the very wide range of the gifts of the Foundation, the numerous churches and
societies which have accepted help without harm resulting, as far as can be ascertained, it seems the wiser policy not to fear, but to go boldly ahead with the means so generously placed at our disposal.

THE ROCKEFELLER FOUNDATION AND CHRISTIAN MISSIONS.

As it is of the greatest importance that a clear understanding should exist concerning the attitude of the Rockefeller Foundation towards Christian missions, the issue of this number of the Journal has been delayed for a few days in order to insert a recent letter on this subject from Mr. John D. Rockefeller, Jr., directed to Dr. Robert E. Speer of the American Presbyterian Board of Missions, who courteously granted permission to print it.

61 Broadway, New York, U.S.A.,
March 15th, 1915.

Dear Dr. Speer:

For some time the Rockefeller Foundation has been considering the need of scientific medicine in China and how best the Foundation might assist in meeting the need. A tentative general plan of procedure was adopted nearly a year ago, after conference with many eminent authorities on the subject. A competent Commission has since then visited China and studied with great care present medical conditions in that country. This Commission has now made a comprehensive report and has offered a series of recommendations. These recommendations have been tentatively adopted by the Foundation, subject to such changes as experience and further enquiry may suggest.

Happily, the Foundation is not first in the field. Many and various Missionary Societies of America, Great Britain, and the Continent have preceded it. Hundreds of physicians are now practising in China under the auspices of these Societies. Their patients number tens of thousands, perhaps hundreds of thousands, annually. As rapidly as possible hospitals have been and are being established. In some cases these are fairly well equipped, but all of them are still very needy. Half a score or more of medical colleges have been started, partially manned and equipped, and these colleges are being availed of by hundreds of Chinese students, with such preparation, more or less adequate, as circumstances have admitted. The Missionary Boards have been most zealous in medical missions and have done everything possible, with the limited resources at their disposal, towards making this work effective. With these Societies, and with the work undertaken by them, the Foundation from the first has contemplated the most cordial and sympathetic co-operation. We desire to supplement the work of the Missionary Boards where it is incomplete, to multiply it where it is inadequate, and always to engrat
our additions in an entirely vital way. We cannot expect, even did we desire it, that the Societies would materially change their principles, or methods, or the religious qualifications of their appointees, except as the Societies may be self-moved to do so by experience and observation.

But the medical work of the Missionary Societies and Boards is confined to limited areas, and is seriously restricted by lack of funds. In carrying out its comprehensive plans, the Foundation may find it desirable:

1. To assist Missionary Societies to strengthen their Medical Schools and Hospitals by providing equipment and other facilities, and by making annual grants, as may be found expedient, for the support of physicians and nurses selected by the respective Missionary Boards, subject only to the Foundation’s approval of the professional qualifications of the appointees.

2. With the consent of the Missionary Boards to recognize and expand existing Medical Schools, with their Hospitals, and to support these, wholly or in part, from its own funds.

3. To aid other Medical Schools that are not strictly Mission.

4. To establish, equip, and support new Medical Schools and Hospitals.

In choosing its agents, physicians, and nurses, for independent schools or hospitals, the Foundation will select only persons of sound sense and high character, who are sympathetic with the missionary spirit and motive, who are thoroughly qualified for their work professionally, and who will dedicate themselves to medical ministration in China. Beyond these qualifications, the Foundation cannot properly impose tests of a denominational or a doctrinal nature, such as are deemed desirable by Missionary Boards for their own medical missionaries or agents.

In entering upon its work, the Foundation will hope to avail itself of the long and valuable experience acquired by the Missionary Boards in the conduct of their medical missions, and will welcome their sympathetic counsel in all matters of procedure and administration.

While this work of the Foundation will be limited to medical service, we believe it to be the highest duty and privilege of all men to cherish the spirit of Jesus and ever to live and act in that spirit. The desire of earnest Christians to communicate the spirit of Jesus to the Chinese and to the whole world we share to the full. We share with the Missionary Boards also their conviction that the teaching of Jesus must be imparted to the Chinese through preaching and by all other proper agencies for communicating truth, and we are constantly mindful that in so far as we may be able to assist the Missionary Boards in their medical service, the Boards will be enabled to devote added funds to the strengthening and enlarging of their educational and evangelistic work.

As its agency for conducting this work the Foundation has formed the China Medical Board, with offices at 61, Broadway, New York, and has conferred upon this Board the necessary powers and the financial resources believed to be currently needed. (Here follows the list of officers and members.)

In behalf of the Rockefeller Foundation,

(Signed) JOHN D. ROCKEFELLER, Jr., President.
We make no apology for publishing an account of a recent case terminating fatally, in which the physicians diagnosed poisoning by emetine.

Our reason is to draw attention to the necessity of proceeding carefully when using powerful drugs, even when specifics. Some have an old-fashioned attachment to the use of mercury in the treatment of syphilis long after synthetic preparations have despatched it to the rear: nor is this due to the undervaluing of the efficacy of the modern laboratory products; it is rather due to a feeling that having heard of a considerable number of fatalities following their use, we cannot be too careful; at the same time we admit that some of these deaths have been due to a carelessness in carrying out the precautions advised by the introducers.

To return to the particular drug which it is suggested caused the death of the child—we feel that the Scottish verdict of "non-proven" might sum up the matter, at the same time the author deserves our thanks for conscientious publication of the case.

We do not deny that emetine can cause toxic paralysis; we have the notes of the case of a man with left lobe liver abscess in which 22 grains spread over 31 days in hypodermic injections was followed by a condition exactly simulating acute Beri-beri, with loss of motor power in legs, loss of knee jerks, severe tachycardia, tenderness in muscles of legs, and the same difficulty of swallowing as in this case. He recovered without operation from both the liver abscess and the peripheral neuritis, the loss of knee jerks persisting for some months, and at the present moment he is perfectly well.

But though emetine may cause such untoward results, the cases are very rare in which physicians can justly credit it with poisoning patients as well as pathogenic amoebae. To those of us who live in China, the absence of any record of an autopsy will not be a surprise; but it might have strengthened the case for the prosecution if such a precaution had been taken and no other cause of death found.

Toxæmia, as we all are aware, may proceed from sources other than drugs, and toxic absorption from dysenteric ulcerations
causing skin eruptions is not unknown. To those who practise, (and to those who are practised upon) in the haunts of amöebic dysentery the reintroduction of emetine in 1911 by Leonard Rogers of Calcutta has commenced a new era.

Nevertheless we should be careful to base our doses upon the experimental work of Rogers with regard to body weight; his practice and that of the majority is to limit the daily intramuscular dose to 1 grain or less in the average adult, but no very clear limit has been placed as to the total amount which may be given; this is possibly due to the fact that improvement usually sets in within the first few days in the amöebic form of the disease; and, so far as we are aware, no observer has credited this alkaloid with cumulative action.

With regard to the question of dosage in small children, most of us have had experience of such doses as the author of the paper prescribed, without bad effects; however, Archibald in the *Journal of Tropical Medicine and Hygiene*, June 1st 1914, came to the conclusion that young children are "extremely tolerant of the drug emetine."

When, furthermore, we read in Castellani and Chalmers' work on Tropical Medicine that "Peripheral neuritis is not uncommonly met as a complication of dysentery" our natural feeling is to wonder whether the dosage of 10½ grains spread over 2½ days was the main factor in causing the death of this child aged 5 years.

Every dose of medicine is an experiment. The old gibe that we are in the position of pouring drugs of which we know little into bodies of which we know less has truth; but let no one of us neglect the careful use of this alkaloid of ipecacuanha, in children or adults, in cases mild or severe, even if he has no laboratory proof of the presence of the entamœba histolytica; he may once more be in the happy position of having saved his patient by having utilized the joint gift of Vedder the experimenter and Leonard Rogers the clinical pathologist.

**ASIATIC SCHISTOSOMIASIS.**

The many friends of Dr. R. T. Leiper in China and the Far East generally, who have not had the opportunity of reading the results of his researches into Asiatic Schistosomiasis published in the
British Medical Journal, will be glad to see the reprinted article and illustrations. Our knowledge of the full life history of many tropical causes of disease is so limited that when researches such as those carried out by Dr. Leiper and Dr. E. L. Atkinson are published, no one of us can afford to be ignorant of the fresh information. If it had not been for the European war, Dr. Leiper had promised a paper on "Things helminthological" to our Journal, and our readers are in this matter disappointed: but we shall hope to see him back in China before long, to continue his investigations and throw light on matters of interest to us all.

MISSIONARIES AND ACCURACY.

We have had our attention drawn to a leading article in the periodical The Modern Hospital entitled "Foreign Hospital Fiction".

As its remarks are based upon statements alleged to have been made by medical missionaries at work in China with regard to the average cost of patients in Mission Hospitals, we read the article with interest; and the more so since the writer is evidently a seeker after the truth.

To such men and women in the homelands, statements as to the actual cost of maintenance of our Chinese patients often come as a shock, and the quotation referring to "a 75-bed hospital being operated at a total cost of $4 per diem" will naturally excite decided expressions of unbelief and cause wonder as to the quality of the services rendered.

Apart from the very important matter of the quality of the work, the whole question is bound up with the interpretation of the terms used. What does "total cost" convey to the medical missionary, and what, on the other hand, to those who criticise?

To an average missionary physician, thinking in terms of money grants from the Home Boards or gifts from sympathising supporters, the total cost of running the institution is often unconsciously the result of a substraction sum, viz., gross expenditure minus local receipts in fees, etc.

We believe that the remarks of our contemporary are not without considerable reason, and we would therefore urge upon all
our readers the paramount importance of accuracy in our statements even if we dwell among a people whose motto is差不多.

(For making the above statement as to the national motto, we apologise in advance to the many exceptions.)

We appreciate such honest criticism, the more so because we have not read a good number of Mission Hospital Annual Reports without realizing that there are many forms of making a financial statement. We have even seen some reports which published no statement of accounts whatever; such an omission may occasionally give rise to feelings of suspicion.

The enemy who wishes to blaspheme must be met with the truth which should disarm him; and the constant thoughts of economy which enter into the lives of most missionary physicians, enabling the most extraordinary results to be gained in the matter of the "total cost" of hospital maintenance, should not prevent our making the facts clear to the average man in other lands.

For ourselves we believe that uniformity in accounts and balance sheets in all our hospitals is likely to result in even greater economies, just as it did amongst the hospitals of London.

We thank The Modern Hospital for its generous references to the China Medical Missionary Association and to this journal in particular, and also for the criticisms to which we have referred and the spirit in which they were made.

OUR EXECUTIVE SECRETARY.

During the last few years the conviction that the welfare of the Association requires the exclusive services of an executive secretary has steadily increased in strength. The president and other officers of the Association, in their several capacities render good, faithful service in attending to its affairs, but their offices are not held permanently, and this cannot but impair, however slightly, the efficiency and continuity of the work. An official is needed, who will have all the details of the work of members of the Association at his fingers' ends, whose own work will serve to connect the different units, who can act as the representative of the Association whenever necessary, and in various other ways do for the C. M. M. A. what Dr. Gamewell is doing for the Educational Association, and what the China Continuation
Committee is doing for missions in China generally. In 1913, at the Peking Conference, the appointment of an Executive Secretary was considered, but nothing definite was done. The Executive Committee to whom the matter had been referred for further consideration kept it steadily in mind, but was unable to recommend positive action. In 1915, at the Shanghai Conference, Dr. Neal was nominated for the office. He could not accept until someone had been found to take his place at Tsinansu; moreover, in a short time he would be returning home on furlough. The Conference then left it to the Executive Committee to make the appointment.

At a recent meeting of this Committee, it was decided that immediate action was necessary in view of the important and urgent situation created by the recommendations of the commissioners of the Rockefeller Foundation. Accordingly, the position was offered to Dr. Beebe of Nanking, a member of the Executive and a former president of the Association. Fortunately for the Association, arrangements were made enabling him to accept. His Mission consented, and the China Continuation Committee, with no other desire than to help the Association, has generously provided office accommodation and granted an appropriation to defray office and other expenses. It need hardly be said that Dr. Beebe can rely upon our hearty co-operation in the duties upon which he now enters. The following letter is from him:

To the Members of China Medical Missionary Association:

The office of Executive Secretary has been provided for by the Association, and rooms furnished by the China Continuation Committee at No. 5 Quiusan Gardens, Shanghai.

It is desired that this office shall have all the available information in regard to the medical missionaries, their field, their work, and their general interests. The China Medical Missionary Association should have the latest and most accurate information in regard to medical mission work in this country.

The undersigned has undertaken the work temporarily, but it is expected that the office will be a permanent feature of the Association and that some one will be found to give all his time and energies to the position, so that the work shall be of continued and permanent efficiency.

If the work of this office is to be a success, it should have the hearty support and co-operation of the whole medical missionary body. There should be a spirit of mutual helpfulness.
Meetings of the Executive Committee.

Medical missionaries are overburdened with urgent duties, and an additional request upon their time and strength, especially if it comes in the form of a circular letter, is sometimes difficult to receive graciously. You and I may be put in that embarrassing attitude towards each other. If we are, please consider that my effort is to further the interests of the medical missionary body, which includes your own interests, and that I am trying to hold myself in the same spirit of service towards you individually.

It is designed to make this office of value to you and to the cause of missions in general, and to this end we desire to be kept informed in regard to any events or changes affecting your work.

Any suggestions as to the scope, functions and methods of the office will be gladly received.

Very truly yours,

Robert C. Beebe.

Meeting of the Executive Committee.

A meeting of the Executive Committee was held in Shanghai
March 5th, 1915, with Dr. Venable in the chair. The following mem­bers were present:—Drs. Venable, Cole, Davenport, Evans, Houghton, Merrins, and Morris.

Dr. Davenport reported that the Council on Medical Education had agreed to accept him as their representative on the Executive Committee.

Dr. Houghton reported that the Council on Public Health had appointed him as their representative on the Executive Committee.

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A communication from a conference of societies and publishers engaged in the printing and publishing of religious literature in China was read, enclosing the provisional constitution of a new organisation to be known as "The Christian Publishers Association of China."

The object of the proposed union is to co-operate in ensuring a united and progressive policy in matters of production, printing, distribution, nomenclature, and other matters affecting Christian literature. It was decided to approve the constitution provisionally, provided that whatever nomenclature is adopted by them shall be in harmony with that adopted by the Terminology Committee of the C. M. M. A., which intends to work in conjunction with representatives from the Chinese government.

In regard to changes to be made in the constitution necessitated by the creation of the office of Executive Secretary, which was referred to the Executive by the Conference, a sub-committee, consisting of Drs. Davenport and Merrins was appointed to draw up the proposed changes.

Dr. Houghton reported that the Council on Public Health had held two meetings, and had drawn up a program for the year's work in
co-operation with the Y.M.C.A., and he presented to the Executive a request for a grant of $1,500 (900 of this for equipment, and $600 for postage, travel expenses, etc.) from the funds of the Association. After some discussion it was moved and carried that the sum of $750 be appropriated for this work, and that consideration of the rest of the request be deferred until a later meeting.

A motion was carried that the permanent committees (exclusive of the Terminology Committee) be asked to send in their budgets to the Executive as soon as possible.

The recommendation from the conference in regard to the establishment of a Research Institute was left to a later meeting for consideration.

In view of the fact that Dr. Snell, the Business Manager of the Journal, is expecting to leave in June on his furlough, the question of someone to take his place during his absence was referred to a subcommittee consisting of Drs. Davenport, Merrins, Houghton and Morris, with power to act.

The meeting then adjourned.

H. H. Morris, Secretary.

Chinese Co-operation in Standardising Medical Terms.

Shortly after the general conference of the China Medical Missionary Association last February, the Terminology Committee, under the leadership of Dr. Cousland, held a very important meeting with a number of representative Chinese educators, medical men, and publishers. The object of the meeting was to unite in common effort medical and other scientific men, Chinese and foreign, who are working at the problem of the unification and standardization of Chinese medical terms.

The following were present at the meeting:—

Messrs. Y. P. Huang, E. F. Shen, Chinsan Young, and David Z. T. Yui of the Educational Association of Kiangsu Province; Messrs. Y. Chuon, W. C. Chiang, Y. C. Chang, and Dr. P. W. Kuo of the Commercial Press; Messrs. K. C. Wu, Y. L. Fan, P. C. Ouyang, and P. H. Lofee of the Chung Hwa Book Company; Mr. Y. K. Woo of Publication Department, and Dr. W. W. Peter of Lecture Department of National Y. M. C. A.; Mr. S. P. Chu, Agent of “Science” magazine; Drs. P. B. Cousland, J. G. Cormack, J. H Ingram, R. T. Shields, and J. B. Neal of Publication and Terminology Committee; Dr. E. T. Esse; Dr. W. Chow of Soochow; Drs. C. Wan and L. T. Wong of Shanghai; Drs. C. C. Han and Y. K. Wang of Hangchow; Mr. C. Chiang, President, Government Teachers’ College, Nanking.

Mr. Y. P. Huang, Vice-President of the Educational Association, made a few appropriate remarks in introducing the subject. In reviewing the work of the Terminology Committee of the C. M. M. A., Dr. Cousland briefly referred to the few principles adopted for their work.
The first principle was to make use of as many old Chinese medical terms as may be advisable; the second, to select a few of the most appropriate Japanese medical terms in case of need; the third, to transliterate or phoneticize foreign terms; the last, to translate the meaning of Western medical terms. In conclusion, he pointed out the disadvantage of adopting Japanese medical terms in toto for use in China. For in many cases, Japanese medical terms are too literally translated to be of use, while the transliteration of medical terms cannot be introduced because the Japanese pronunciation is so different from the Chinese.

Mr. Chow made the following recommendations:—

1. Those who are translating medical terms ought to have a full knowledge not only of old Chinese medical terms, but also of Western terms and their derivations.

2. He confirmed Dr. Cousland's statement regarding the use of Japanese terms for Chinese medical work, and added that eight-tenths of the translated terms were usable, but that none of the transliterated terms could be introduced.

3. He suggested that a national medical educational conference be convened and the approval of the Ministry of Education in Peking be secured when the medical terms were to be standardized.

Mr. Han said that the progress of medical education in China had been greatly retarded because of the confusion, irregularity, and insufficiency of Chinese medical terms. A number of Chinese medical men had been contemplating calling a national medical conference for the purpose of unifying and standardizing these terms. He urged that a full report of the work of the Terminology Committee should be prepared and sent to representative Chinese medical men in the country.

Mr. Wang proposed that not only medical terms, but also the whole nomenclature of the pharmacopoeia should be translated and standardized. He further suggested that in the Educational Association of Kiangsu Province there should be organized a study-group to investigate medical education in China.

At the close of the meeting four resolutions were introduced by Mr. Huang, Vice-President of the Association, and adopted by the meeting:—

1. That Chinese medical men, or those interested in medical education in different centres, like Soochow and Hangchow, should for the purpose of furthering medical education organize themselves into groups and have them reported to the Educational Association of Kiangsu Province, through which direct communication with Dr. Cousland and his Committee could be effected.

2. Copies of any literature on medical education prepared by Chinese medical men, or those interested in this work, should be sent both to the said Educational Association and to Dr. Cousland for further study.
3. Dr. Cousland should be requested to prepare a list of basic terms in medical use and have copies sent through the said Educational Association to the Chinese medical men or those interested in this work in different parts of China for consideration and suggestions.

4. When these suggestions and reports of studies have been received, invitations will be sent by the said Educational Association to the Western and Chinese medical men and also to those who are interested in scientific studies, for a general conference in Shanghai. For the purpose of unification and standardization, they will then decide to send a joint petition to the Central Government for the appointment of several official delegates, who will study the medical terms together and recommend the same for Government action.

Entrance Requirements, Union Medical College, Peking.

The following increased entrance requirements become effective, September, 1915:—

I. (1) All entrants to the Medical Preparatory Class must first pass examinations in the following subjects:—

Wenli Composition; English Reading, Third Reader; English Composition; Arithmetic; Plane Geometry; Algebra to Quadratics; or

(2) Bring diplomas or "leaving certificates" showing satisfactory work in these subjects in academies, high schools, or middle schools, admitting without examination to the Freshman Class of the North China Union College of Arts or of Peking University.

II. (1) All entrants to the first year class of the Union Medical College must present a leaving certificate from the Medical Preparatory Class of the Union Medical College, Peking, or

(2) Having satisfied the conditions under I. 1, pass examinations in Chemistry, Physics and English, or

(3) Bring a diploma from a college or university recognized by the faculty of the Union Medical College; or certificates from a college or university recognized by the faculty of the Union Medical College showing completion of the three years of the combined Arts-Medical Course; as well as, in either case, certificates showing the subjects studied and the marks attained in each.

In the Autumn of 1916, the entrance requirements will be as follows:—

I. (1) All entrants to the Medical Preparatory Year of the Union Medical College must pass the entrance examinations of Freshman Class of the North China Union College of Arts or of Peking University, or

(2) Comply with I. 2, for Autumn 1915.

II. (1) All entrants to the Medical College must present leaving certificates from the Medical Preparatory Class of the Union Medical College, Peking, or

(2) Comply with II. 3, for Autumn 1915. (Note. Certificates, to be acceptable, must show that the course pursued by the student covered the subjects required and was of the grade required by the Preparatory Year of the Union Medical College, Peking).

NOTE.—The following colleges and universities in the North are at present recognized by the faculty of the Union Medical College, Peking:—The North China Union College of Arts; The Peking University; Shantung Christian University. Arts College,
Notes and Comments.

The "Door of Hope" of Shanghai has just issued its Annual Report and, as usual, it is a record of beneficent work well done. Some of the incidents narrated are most pathetic. The social evil in China, in which, alas! many foreigners are involved, must eventually be tackled by the Council on Public Health. We wonder if there are not already in several large Chinese cities a sufficient number of Chinese ladies, Christian, elderly and of a wise and winning disposition, who could be started in the work of saving little girls from a destined life of shame, and of rescuing those who have fallen. In work of this kind as in everything else, the Chinese must be taught to help themselves.

Medical Missions in India, the quarterly journal of the Medical Missionary Association of India, in its January issue contains a list of the medical missionaries in India. There are 123 men and 221 women, in all 344, compared with 128 men and 225 women, in all 353, as registered last year. It contains also an interesting reference to an article in "The Indian Medical Gazette," describing the prevalent forms of devil-possession of which newly-born infants are the victims. The devils are known as panchoa devils, and are of two kinds, the silent and the crying. Possession by a silent panchoa very often means tetanus, a disease that kills a very large number of infants in Bengal. The crying panchoa causes the child to be fretful and restless. "In spite of the precautions of the villagers to ward off the panchoa devils by placing the skull of a cow painted with vermillion, cowries, and a scarecrow figure of a man made of cow-dung, in the door of the hut, a great many of the children fall victims to the diseases that are attributed to the panchoa devils, but are really due to the devil of dirt."

In an instructive article in a recent number of the Bristol Medico-Chirurgical Journal, on "The Evolution of Gynecology," in which full credit is given to the work of the American surgeon, Marion Sims, the writer states that: "I saw my first ovariotomy at the age of fifteen. The operator did not even wash his hands or take off his coat, the instruments were placed on a blanket thrown over the patient's feet, the operation was done in twenty minutes, the pedicle was clamped outside the abdomen, and the clamp left on under a water dressing. On the third day after the operation I saw the case in the post-mortem room, with a large amount of stinking pus in the pelvis, and the man who made the post-mortem had three cases of puerperal fever in his own private practice, all of which were fatal during the following week." Surgery of this kind seems to belong to a very remote past.

"The general appearance of the wards in a Chinese Hospital is very variable and depends in part on the doctor in charge, and in part on whether there is a foreign nurse associated with the hospital. It is almost possible to tell whether the hospital has a foreign nurse or not by glancing into the wards. In some hospitals the wards are clean and orderly and compare very favourably with hospitals in the West. In others, where there is no foreign nurse and an inadequate native nursing staff or where the friends of the patients are allowed to camp in the wards, the general appearance is far from satisfactory."


"There is, however, one thing to be said in favour of letting the friends into the wards at all times. In many hospitals there is no nursing staff, or there are so few native nurses as to make it impossible for them to care for the patients. Under such conditions, the patients must be attended by their friends. The solution thus lies in making provision for adequate nursing."

Ibid., page 61.
Judging by circulars recently received, the name of one of the members of our Association is being used very freely to promote the sale of a particular apparatus made by a particular firm. Of course, it is a great convenience to missionary physicians, who so often must buy in the dark, to be able to purchase apparatus which is confidently recommended by one of their number. But cannot this advantage be secured in the regular way? Let the manufacturer's circular state that he is permitted to give references, without mentioning names, and let the names be given privately to those who ask for them. Practices may easily be started at the present time which will not be for the good of the Chinese profession now being formed. Besides, following this lead, what is there to prevent half a dozen missionary physicians each publicly endorsing similar apparatus made by rival firms?

In compliance with a request we print the following verses which appeared originally in the *Journal of the American Medical Association*.

**The Editorial Dr. Jekyll and the Advertising Mr. Hyde.**

*The Double Standard.*

"Important is the nation's health
Naught is the question of the shekel.
Ill fares the land that worships wealth!"

Says Editorial Dr. Jekyll.

"Do you get up with pains or cricks?
Do you have stitches in the side?
BUY DR. KILLMAN'S VITELIX!"

Says Advertising Mr. Hyde.

"Down with the greedy grafters who
The land's escutcheon do bespeckle!
Three cheers for the Red, White and Blue!"

Says Editorial Dr. Jekyll.

"Does zero weather give you chills?
Insomnia leave you weary-eyed?
BUY PHAKEM'S PHONY PURPLE PILLS!"

Says Advertising Mr. Hyde.

"Better than gold an honest name."
"Be true, and let the envious heckle."
"Be fair, whoever wins the game."

Says Editorial Dr. Jekyll.

"Lost energy? Ambition? Calm?
GET DR. FIERCE'S GILDED GUIDE
REMEMBER BIDDY BUNKEM'S BALM!"

Says Advertising Mr. Hyde.

Perhaps these verses were sent as a sly hit at the advertising pages of the *Journal*. But a careful examination will reveal that the *Journal* is free from all advertisements of a decidedly objectionable kind, and contains only one or two that may be considered doubtful and which will probably tend to disappear as contracts run out. Sometimes it is very difficult to decide whether an advertisement should be rejected or accepted, particularly when it has already appeared in leading medical journals. However, it may be better for us to take our own course, and in doing so we can hardly do better than take as a guide the rules adopted by the Council on Pharmacy and Chemistry of the American Medical Association in dealing with medicinal substances which it is desired to include in their list of new and unofficial remedies. If we follow these rules,—(a) no advertisements of secret remedies should be accepted. (b) Articles advertised
to the public should not be accepted, except (1) disinfectants, germicides, and antisepsics; (2) non-medicinal food preparations; (3) articles advertised by circulars which are distributed solely to physicians, and by advertisements in medical journals. (c) The advertisement of no article should be accepted whose label, package, or circular accompanying the package, contains the names of diseases in the treatment of which the article is said to be indicated. (d) No advertisement should be accepted containing false or misleading statements concerning the source, the raw material from which the article is made, or method of collection, or preparation. (e) Advertisements containing unwarranted, exaggerated, or misleading statements as to the therapeutic value of a medicine should not be received; (f) nor of articles bearing objectionably suggestive names, or names which suggest diseases, pathologic conditions, or therapeutic indications. Lastly, advertisements of articles which, because of their unscientific composition, are useless or inimical to the best interests of the public or of the medical profession, should not be received.

In the "Annals of Tropical Medicine and Parasitology," for December, 1914, among other very instructive papers is one on "The Morphology, Biology, and Economic Importance of Nosema Bombi, n. sp., parasitic in various Humble Bees." The economic importance of humble bees is due to the fact that their activity is essential for the fertilisation of certain plants of agricultural and chemical importance, the red clover being the best known. We remember that long ago, as a familiar illustration of the web of life, Darwin managed to find a connection between clover and old maids. The pollen of clover is carried from flower to flower by the humble bees; the number of humble bees depends on the number of field mice which destroy the combs of the bees; the number of field mice depends on the number of cats in the neighbourhood, and the number of cats depends on the number of old ladies in the village who keep them as pets. This was an attractive theory. But the authors of this paper are ruthless, and prove that the diminution of humble bees is owing to their destruction by Nosema Bombi. There is no getting away from the ubiquitous parasite. It is a consolation that old ladies can now keep their cats with a clear conscience, and need not be worried over the dearth of clover.

The New York Medical Journal of January 30th, 1915 gives us a very simple and certain method of salvation from the pernicious habit of cigarette smoking. It is contained in the following literary gem:

"We are reminded that many of the officers on board the British dreadnought, "Formidable," smoked cigarettes while she sank, thus defying some of the best moral thought in the United States and setting a wretched example to the men, who fortunately were saved by not having time to acquire the dreadful habit."

Whilst acquitting the editorial department of all credit for the above essay in the domain of "preventive medicine," we have a recollection of the commander of the submarine, evidently of the same turn of mind as the writer in the American journal, who was reported to have excused his inability to save the swimming passengers of the "Falaba," because "he was forbidden to take on board strangers who are not used to living on board a submerged boat.

Must we admit that the milk of human kindness is being well diluted nowadays, or is it a lack of perspicacity or humour on our part that prevents us from recognising the thoughtful kindness underlying such comments and incidents?

Y. Z.
INTRAMUSCULAR INJECTIONS OF QUININE.

In a letter to the Lancet (June 6th, 1914), Captain A. G. Tresidder replies to the remarks made by Sir Ronald Ross regarding the successful treatment of a case of malarial coma by intramuscular injections of quinine (see Tropical Diseases Bulletin, Vol. 4, p. 92). He points out that Sir David Semple's experiments appear to disprove the statement that quinine is absorbed with very great difficulty from muscle and subcutaneous tissue. Further, he cites the results of clinical experience in favour of this method of administration and quotes MacGillchrist to the effect that although quinine, when given by the mouth, is more rapidly absorbed, the curve of absorption is more sustained when the intramuscular method is employed. He states that a "possible explanation of the clinical observation that injections of quinine do good when oral administration fails is that in malaria the co-existing catarrhal condition of the gastro-intestinal tract may considerably inhibit the absorption of quinine." Later on he refers to Sir David Semple's experiments as regards the relation of intramuscular quinine injections to tetanus and records his belief, which most clinicians in the tropics will certainly agree, that these experiments have never convinced him that quinine injections as used in practice are dangerous, or that their administration requires the simultaneous injection of tetanus antitoxin. He criticises the experiments, laying stress on the magnitude of the doses employed in the case of guinea-pigs, and showing that corresponding doses in the case of human beings would amount to over 100 grains for a man of 11 stone. If, he says, it is true that quinine injections favour the onset of tetanus by paralysing the phagocytes and by destroying tissue at the site of injection, then the larger the dose of quinine the more favourable would be the conditions for the development of tetanus. In this connection he pertinently remarks that it would be interesting to know what percentage of guinea-pigs, if any, would develop tetanus after the injection of 1-15th grain of quinine, which is the proportionate dose for a guinea-pig of 500 grammes weight, assuming that 10 grains is a suitable dose for a man of 11 stone. He agrees with Sir Patrick Manson that it is not the quinine but faulty technique which is to blame.

In his experience, cases of malaria, even in its pernicious forms, do not, as stated by Ross, generally recover temporarily without any treatment at all. The convulsions which occurred in his case he attributes to the toxins of malaria irritating the cerebral centres, and he concludes his paper by reaffirming his belief in the value of intramuscular injections.

[The question which Captain Tresidder discusses is one of such importance that the reviewer may perhaps be permitted to make some remarks regarding it. There can be no doubt that African practice and, as is evident from a trenchant article in the China Medical Journal for July, 1914, Chinese practice, is strongly in favour of intramuscular quinine injections. The writer had recently an opportunity of discussing the question with a British physician in Maracaibo, who has had a large experience in the treatment of severe cases coming from the very malarious districts in north-western Venezuela. He pinned his faith to the injection method. Recently a sad case]
occurred there, for a young American engineer treated by a local native practitioner with intramuscular injections died of tetanus, the direct result of the treatment. Enquiry, however, showed that there had been gross carelessness and no attempt either at sterilisation or common cleanliness. As is well known, Ross, Rogers, Thayer, Bates and others are opposed to the injection method, but in the case of the last named the objection is a modified one, as will be apparent if reference be made to the summary of his paper appearing in this Bulletin, Vol. 2, p. 554.

There is doubtless something to be said on both sides, though personally the writer is of opinion that for some purposes there is a good deal of evidence pointing to the superiority of the oral method of administration. Quinine, and more especially when quinine can be given in effervescing mixture, is best to administer it by the mouth. Of course, so far as experience, and perhaps to a greater extent that of others, has taught him the value and efficacy of intramuscular injections. They are indicated in all cases of gastric disturbance, such as so often occurs in quartan infections; in all cases which, so to speak, "hang fire," and, save when intramuscular administration in high dilution is urgently required, in cases where pernicious symptoms have developed, or where pernicious aura is present. In all such cases the writer believes in two, three, or more quinine injections, and then, if it can be tolerated, ample and prolonged treatment by the mouth, giving the drug preferably in effervescing form. In two severe quartan attacks, one of which occurred in his own case, the happiest results were obtained, the cure being, so far as can be told, complete, and it must be remembered that the type specially prone to relapse. In both these cases quinine failed at first when given orally, possibly on account of gastric disturbance. One is inclined to think that the personal equation is not sufficiently considered. Doubtless, muscles differ just as stomachs differ. Some can readily absorb quinine, others cannot. It is possible that the age factor has to be remembered. One has seen intramuscular injection apparently fail in a debilitated subject of nearly 50 years of age.

Again, it is likely that sufficient work has not been carried out as to the most suitable site for injection. We find that most prefer the buttock, but one German physician favours the deltoid. There is research to be done in this direction. After all, however, and with due deference to theories and to experimental work, it is to be remembered that there is a wise old Scottish proverb to the effect that "the proof of the pudding is in the preein' o't." There is, undoubtedly, a vast mass of clinical experience to show that intramuscular quinine injections possess the confidence of members of the profession practising in the tropics, and this is true amongst all nations and probably in every country. Captain Tresidder puts the matter in a nutshell when he says, "I think it unlikely that the practitioner in the tropics would give the care and time necessary to their preparation unless he firmly believed that some material advantage was to be gained for his patient, and unless his results from this mode of treatment were clinically more satisfactory than those obtained by the much simpler action of writing a prescription."

In this connection it is perhaps not out of place to direct attention to the treatment of lobar and lobular pneumonia by large intramuscular injections of quinine as carried out by Solis-Cohen in the United States. The quinine, given along with cocaine or pituitary extract, and in certain cases associated with vaccine therapy, is believed to neutralise the toxins of pneumonia and to prevent cardio-vascular paralysis. It is said to be very successful, and even when it fails to effect a cure it adds greatly to the patient's comfort. It certainly does not impose upon him weary days of suffering as a result of muscle necrosis or abscess formation.—A. BALFOUR in Tropical Diseases Bulletin, Volume IV, No. V.

ACCLIMATIZATION OF EUROPEANS IN THE TROPICS.

"The possibility of a Northern European race acclimatising itself in the tropics is one of vast importance, especially to the inhabitants of Australia, as so much of the Northern portion of that island continent is within the tropics."
Theories are many and facts are few, therefore it is worth while giving some details of a genuine example of an unintended experiment in this direction, as narrated by Mr. J. Macmillan Brown in his recent book, "The Dutch East" (Kegan Paul & Co., 1914).

The story is briefly as follows:—
In 1665, eight Dutch soldiers were sent by the Netherlands East India Company to the little island of Kissa, 16 miles off the most easterly point of Timor. A fort was built and they were told to watch the Portuguese. The Company forgot all about this lonely outpost, and Sergeant Kaffyn and his men realised that they were in fact marooned. They had their wives with them, in accordance with a guiding principle of the Dutch East India Company. They set to work to build houses and cultivate the land. The descendants of these eight couples still remain. They have been wonderfully fertile, in the two and a half centuries, as the 16 have risen to 300, and they are a sturdy race with no signs of any evil effects from interbreeding. They keep their blood pure, and still have big families, and many have fair European faces and complexions, and many children have light hair and blue eyes. These people had to work, and work hard, and the consequence is that after 250 years in this tropical island they are still fertile, indeed prolific, and still keep their North European characteristics.

Surgery.
Under the charge of Adrian S. Taylor, M.D.

INTESTINAL SURGERY IN LONDON.

In the New York Medical Journal of January 30th, 1915, there is an interesting article by Dr. J. F. Saphir on "Rectal Clinics in London." Writing of St. Mark's Hospital, he speaks of it as the first and largest hospital for rectal diseases in the world. It was founded just eighty years ago on the same spot.

He says:—Contrary to our methods in America, the London surgeon does not operate until the afternoon, usually at 2 or 2:30 p.m., and invariably when the hour of 4 or 4:30 arrives, the instinctive or habitual desire for tea comes to the fore, and surgeons, anesthetists, and visitors are invited to partake of the national beverage and participate in the time honored custom of tea and buttered bread or cake intermingled with a friendly chat and a cigarette for about half an hour, when all return to the operating room and work is resumed.

All visitors, before entering the operating room, are provided with caps, gowns, and rubber boots, but the American surgeon visiting the London hospitals is astonished when he sees the London surgeon remove his shoes, and don a pair of rubber boots before entering the operating room, while he wears his shirt and collar throughout the operation.

All London hospitals have anesthetists who are specialists and experts in their work and do not depend on their house staff to give anesthetics. I consider this an excellent thing for the patient and the hospital, and a godsend for the surgeon, who can continue with his work without worrying about the condition of his patient, knowing that he can depend upon his anesthetist to do exactly what
should be done and at the proper
time, in any emergency.
The results of the combined
efforts of the expert anesthetist and
the surgeon, work out so splendidly
that I am amazed that the American
surgeon has allowed his English
cousin to put this safety device into
practical use before him, but I
firmly believe that the time is not
far off, when we shall adopt the
same methods here and every
patient undergoing operation will
be placed in the hands of a skilled
anesthetist.
The London hospital wards are
large and roomy, and heated by
gas or furnace, rather than by
steam. The beds are comfortable
and clean. The buildings are old
fashioned but substantial, and the
keynote of everything surgical in
London seems to be solidity and to
be made to last.
Local anesthesia, I am sorry to
say, has not yet reached London,
and many of the patients I have
seen in the outpatient department,
who were sent away with a jar of
the famous “St. Mark’s jelly”
(the chief ingredient of which is
confection of senna, and which has
been used since the inception of the
hospital) and who were told to
come again and again, because of
the long waiting list, usually 150
to 200, could have been relieved of
their rectal ailments under local
anesthesia in the outpatient de-
partment, by means of quinine and
urea hydrochloride, especially cases
of thrombotic hemorrhoids, anal
fissure, skin tags, internal hemor-
rhoids, ulcers of the anus, rectal
polypi, and some cases of fistula
ani.
The technic of these skilful
surgeons at St. Mark’s cannot be
questioned, when one sees as many
as seven to nine rectal operations
most thoroughly performed in an
hour, but given a hospital of fifty
beds, with a waiting list of 180 or
200, a stay in the hospital of two
or three days for the average fissure
or hemorrhoid case, and three to
five days for fistula cases, judicious
use of local anesthesia in the out-
patient department would greatly
relieve this congestion and enable
many more suffering mortals to reap
the benefits of the health giving
skill of these surgeons.
In hemorrhoid operations, the
ligature method stands first, and in
the past year was used in 240 out
of 284 cases, while twenty-seven
cases were operated on by the clamp
and cautery method, and in only
eleven of these 284 cases was the
Whitehead operation performed.
All patients are given 1/100 grain
atropine, or a quarter grain mor-
phine and 1/100 grain atropine,
about one hour before the opera-
tion. That ancient barbarous
rubber hose surrounded with a plug
of iodoform gauze mesh is taboo,
the sphincter muscle is not stretched
to the tearing point any longer, but
careful attention is given to most
rigid cleansing of the rectum and
anus before operation.
As I have said before, nothing
but praise can be given to the work
done at St. Mark’s Hospital. The
judgment of the surgeons is good,
the technic excellent, and the relief
of the patients self-evident. The
surgeons are courteous and polite
and their hospitality is extreme.
The London surgeon does not
live in the hurry and bustle of his
American cousin. He lives better,
gets more out of life than we do,
sees more of his family and friends,
and never allows anything to in-
terfere with his afternoon tea.
To be in London, and not to see
Sir Arbuthnot Lane, is considered
among the medical fraternity as
great an offence as to have been in
Rome and not to have seen the
Pope.
In the famous Guy’s Hospital,
on St. Thomas street, near the old
London Bridge, almost any afternoon, work of interest for the surgeon can be seen, and during the week that the surgical congress was held in London, Sir Arbuthnot Lane held clinics morning and afternoon, to enable the 1,500 surgeons of North America who visited London, to see his excellent bone work and his famous short circuiting bowel operations for intestinal stasis.

In cases of marked intestinal stasis, especially seen in nervous, run down women, suffering from constipation and staining of the skin, he performs his short circuiting operation or ileosigmoidostomy, and in cases with a sagging colon, he performs a colectomy.

As a technician, Sir Arbuthnot Lane reigns supreme, and one is very much impressed on seeing him sit down on a high stool alongside the operating table, on the left side of the patient, and in a very calm, precise, accurate, and businesslike manner open the abdomen from just above the pubes to the eusiform, and in conjunction with his able assistant, clamp, tie and cut, clamp, tie and cut, almost automatically, remove the lower end of the ileum, and the caecum, ascending, transverse, and descending colon, and make an anastomosis between the ileum and the sigmoid; then in just as automatic a manner, another assistant inserts a tube into the rectum, and allows an antiseptic solution to flow into the gut, to see that there is no leakage. The abdominal wound is closed and the operation is over before one really is able to realize the boldness and extent of the operation. During the entire time the patient receives saline hypodermoclysis in both axillae, simultaneously.

Sir Arbuthnot Lane is most thoroughly convinced that colectomy and his short circuiting operation will do all he asserts in their favor, and by his very presence, his wonderful technic and personal magnetism, and his absolute sincerity in his belief, I have no doubt that he will ultimately be able to convince the medical fraternity that his theories are correct.

When he speaks of intestinal stasis, he is so thoroughly saturated with his belief in the benefits to be derived by suffering humanity from his colectomy and ileosigmoidostomy operation, that his face lights up, his eyes begin to sparkle, and he speaks with a sort of religious fervor as if he was inspired; and this, in conjunction with his wonderful personality and personal hypnotic magnetism, sends one away from his clinic much impressed with the idea that he has basked in the sunshine of a very wonderful man, even though he may not have become converted and still has some differences in opinion.

Lane believes that gastric and duodenal ulcer and cholelithiasis can be cured by his colectomy operation. He relieves rheumatoid arthritis, tuberculosis, and exophthalmic goitre and melancholia, and by colectomy he also prevents cancer, and what is more, he shows patients who have been relieved by operation.

The medical fraternity have been slow in accepting his theories, but Lane continues his short circuiting and colectomy operations, and does them as no one else can do them, and gets results, and his belief is, that if his views are correct they must triumph, and if otherwise, they will not survive.

I most thoroughly enjoyed the work, the conscientiousness and the thoroughness of the London surgeons. They are honest and sincere in their work, and extremely hospitable to surgeons visiting their clinics, their homes, their city. They take their time about things
and live better and more comfort­ably than we do and without any hustle or bustle, but they "get there just the same." They do not work as hard, but they manage to get more out of life than we do.

They are genial and kind, polite and hospitable, and I take this means of expressing my apprecia­tion to the London surgeons for their many generous courtesies ex­tended to me.

Obstetrics and Gynecology.

Under the charge of MARGARET H. POLK, M.D.

TWILIGHT-SLEEP.

From an article published in the February 13th, 1915, number of the New York Medical Journal, John Osborn Polak, M.D., F.A.C.S., of Brooklyn, N. Y., the following ex­tracts are taken.

"Daemmerschlaf, as twilight­sleep is called by the Freiburg School, is the application of partial narcosis to labor, produced by the administration of morphine and scopolamine. The narcosis is so light as to eliminate only the mem­ory of the subjective pain, without interference with the uterine con­tractions. Its previous employment in America has been more or less sporadic aud unsuccessful. We believe this was due to two causes.

1. We have attempted to follow routine doses with unstable prepar­ations of the drug. We have failed to individualize the patient, conse­quently, the children were narcotised or asphyxiated, the labors were prolonged, and forceps became a frequent necessity. Delirium was common, and third stage inertia with hemorrhage was no infrequent complication. The children and women were over morphi­nized.

In Gauss's latest report he re­cords 4,111 cases of labor in which morphine and scopolamine have been employed with a lower mater­nal and foetal mortality than has been secured by any ordinary clinic in Europe. These results have been obtained, first, by individualizing the patient and minimizing the dose; second, by giving each wom­an a full test of labor without re­ducing her physical strength by sub­jecting her to the nerve racking pain of prolonged labor; third, by limiting the number of vaginal examinations, and following the course of labor by abdominal and rectal examination; hence all opera­tive procedures were done in dilated passages, and trauma to the soft parts and infection have been re­duced to a minimum."

"Statistical studies, both here and abroad, show us that it is possible to pro­duce amnesia and partial analgesia in about ninety per cent of the cases in which morphine and scopo­lamine are used; hence we feel that a woman is entitled to a pain­less labor if she can get it without increasing her own risks or those of the unborn child. Suffering ex­hausts more than physical labor."

"We no longer ask our patients to submit to a surgical operation without either ether or gas. Many of us use ether or chloroform as a routine during the perineal stage in ordinary labor; we likewise narcotize the woman for a forceps delivery or a primary repair of the pelvic soft parts. Why not extend this comfort to her throughout labor by producing amnesia and analgesia with safe doses of mor­phine and scopolamine, which do not, if judiciously used, affect uterine con­tractions, once these are estab­lished."
tial narcosis with scopolamine and morphine, is an assured fact, and when used in properly selected cases, where the foetal and pelvic relations are normal, or approximately normal, permits nature to take time to prepare perfectly the cervix, vagina, and vulvar orifice for the passage of the foetus, without physical or muscular fatigue.”

“Scopolamine and morphine shorten the first stage of a primipara. This is not so of the second stage, which may be prolonged beyond safe limits, especially if too much morphine is used.”

“Scopolamine and morphine anaesthesia is not without danger. Neither is the production of narcosis with ether free from accident or complication, yet in competent hands these dangers may be and are minimized.”

“The mother may be particularly susceptible to either scopolamine or morphine, the former causing delirium and the latter coma. The respirations may become arrhythmic and reduced to five or six a minute. The kidney secretions may be diminished, labor may be prolonged, especially the second stage, uterine atony is possible, and post partum hemorrhage has been charged to the method by the American observers.”

“These are the fault of the doses and can be anticipated and prevented by intelligent administration, by the use of the minimum dose to produce sleep, the individualization of each patient, and the very free administration of water throughout the narcosis. It may even be justifiable in cases with kidney lesions, to give saline solutions by hypodermoclysis or colonic irrigation during the labor.”

“Many of the children suffer from oligopnoea for several minutes and it is common for the child not to cry for a minute or two after birth, though the fetal heart shows no disturbance in rate or rhythm. There is, however, no cyanosis unless the dose has been too large, given at too frequent intervals or too late in the labor, or the second stage has been allowed to continue too long. The child, after stretching itself as if awaking from a restful and peaceful sleep, cries lustily.”

“From our observations, both here and abroad, we are convinced there is no reason why Dämmerschlaf should not be used in all women who show the physical signs of active labor, provided the women are under continuous and intelligent observation. It is distinctly a first stage procedure and should not be begun if labor is far advanced.”

The following were the suggestions made by Dr. Polak as to technique:

1. The patient must be definitely in labor, with uterine contractions, preferably every four or five minutes. The woman should be in bed, in a well ventilated darkened room away from noise and excitement.

2. Careful observations should be made and recorded of the pulse, the respiration, condition of pupils, and the condition and frequency of uterine contractions; the woman will ordinarily make outcry and give evidence of pain at the time of contractions, but will immediately fall into a sleep and will not remember it.

3. She requires large quantities of water but no food. The water would best be given just after the pain and at time of injection.

4. The progress of the labor must be constantly watched by repeated abdominal and rectal examinations. Vaginal examinations invite sepsis. To follow the position of the shoulder as it descends and rotates inward toward the median line, is a good index of the progress of labor.

5. The fetal heart-beats must be listened to and recorded every half hour, both in the interval and during pain. Arrhythmic, slow, or too rapid heart-beats call for cessation of drug and rapid delivery. It is not always due to the drug.

6. Solutions of the drug must be absolutely pure. Hyoscine cannot be substituted.

7. The doses differ in individual cases. It is easier to induce sleep early in the
first stage. Danger to the child is greater if sleep is induced later by more medicine.

8. Intelligent employment of the methods shortens the first stage; on the other hand it may prolong the second. This must be guarded against, and if the perineal stage lasts over an hour in multipara or two hours in primipara, delivery should be accomplished with the patient in the Schmitt position, (extreme flexion of thighs on abdomen) with expression of the fetus, or with low forceps.

9. The third stage is not influenced by scopolamine or morphine, and when properly used, the drugs do not predispose to post partum hemorrhage.

10. Low forceps, perineotomy and primary suture of pelvic floor injuries can all be done without further anaesthesia.

Dosage: Polak advises adherence to the Freiburg method of individualizing the patient, giving an initial dose of morphine hydrochloride.

When the labor is fully established one and a half ampoule of each drug (morphine gr. 1/6 to 1, scopolamine 0.0003 (gr. 1/200) is given as the initial dose. Forty-five minutes later one ampoule of scopolamine is administered alone. One hour later a half ampoule of each is given. The amnesia is maintained by giving the scopolamine alone in half ampoule doses every two hours. It is seldom necessary to repeat the morphine again, though in long labors it may be given with every third dose, or every six hours.

The test for amnesia is to show some object and in half hour ask if it is remembered.

Polak ends by saying, "In conclusion, we are more and more impressed as our experience increases, with the wide field of usefulness that scopolamine analgesia will cover in modern hospital obstetrics. We feel, however, that the method should be considered distinctly as one for the expert in the Maternity Hospital.

Interesting articles for and against the use of the "twilight-sleep" are found in The American Journal of Obstetrics and Diseases of Women and Children for December, 1914, and January, 1915; also in Medical Record of December 5th, 1914.
Correspondence.

Correspondents are requested to write on one side of the paper only, and always to send their real names and addresses. The Journal does not hold itself responsible for the opinions or assertions of correspondents; nor can it return unused MSS.

"The Chinese Medical Journal."
The Editor of The Journal.

Dear Sir: Will you kindly insert the following notice and request in the next number of the Journal.

To the Members of the C. M. M. A.:—
Those of you who have subscribed for the "Chinese Medical Journal" will notice a number opposite your name on the outside of the wrapper. If the number is fifteen, it means your subscription is paid up until the end of 1915. If there is a date, as May 1915, or September 1914, it means your subscription is paid up to that date.

For various reasons we are changing the Journal year to the Calendar year. Instead of Volume III ending with the March number, as previous volumes did, it will end with the November number this year, making ten numbers in this volume instead of six.

We have several copies of back numbers of the Journal on hand and we propose, as long as these last, to give all new subscribers this year all the numbers from May 1914 to the end of 1915, ten in all, for the price of one year's subscription. The regular price is $2.00 for one year, or six numbers.

We shall be glad if our subscribers who have not paid up to the end of 1915, would examine the wrapper on their Journal to find out how much they are in arrears, and send in a money order as soon as possible.

It is quite an effort on the part of the editors and business managers of the "Chinese Medical Journal" to get it out every two months, so we feel justified in urging the members of the C. M. M. A. to exert themselves to get new subscribers and keep the old ones paying up, thus giving the Journal as wide a circulation as possible. It takes no more work to get out enough copies for every doctor in China who should have it, than it does for one-fourth or one-third of that number. It is "up to" the members of the C. M. M. A. to see that those who should be reading this Journal subscribe for it.

Dr. Cadbury, who has been Editor-in-chief of the Journal since its beginning, expects to go home on furlough this year. Dr. John Kirk, Canton, has been elected to take his place. As Dr. Kirk is to begin his duties with the May number, he will want all the help he can possibly get from all the members of our Association.

It is surprising how difficult it is to get enough material for the Journal. This is the reason why the Journal has frequently come out late.

If the members who prepare articles or reports of cases for their Branch meetings would have them translated into good Chinese and send them to the Chinese Medical Journal, it would give us an abundance of original material. Others could translate articles from foreign journals. We would also be glad to get items of news which would be of special interest to the medical profession of China. We ask you to get busy and help us to make the Chinese Journal as good as our English Journal.

Very sincerely,

P. J. Todd, Business Manager.
China Medical Journal (Chinese).
Canton, April 7th, 1915.

The Association Conferences.
The Editor of The Journal.

Dear Sir: In reply to the question contained in the leading editorial of the March issue of the Journal, as to whether it is not advisable, for the better trans- action of business, either to lengthen the time of the conferences or else to make them sectional, I think the conferences might well be lengthened to one week. I also think that we should revert to the original arrangement of holding them triennially, not biennially.

Yours truly,

Shanghai.

The Uniforms of Nurses.
The Editor of The Journal.

Dear Sir: "G. Shantung," inquires in the March number of the Journal, "Do hospital superintendents in China find it best to provide the service gown,
Correspondence.

apron, or uniform worn by pupil nurses and helpers?"

All our hospital assistants are provided with operating room robes, aprons, oversleeves, and caps. These are hospital property strictly. The hospital washerman launders them all and the mender of patients' clothing and bedding keeps them in repair. When they are too worn, or soiled with unwashable stains, they are used by the assistants in the outpatient department.

We find there is no other way of enforcing and insisting on clean and uniform garments, as the salaries paid could not possibly warrant us in expecting our assistants to provide these most necessary outfits.

Sincerely yours,

G. Men's Hospital, Kirin.

The Arneth Blood Picture.

To the Editor of The Journal.

Dear Sir: Will you kindly insert in the JOURNAL an explanation of the term, "Arneth Blood Picture," and much oblige,

Yours truly,

Thenar.

April, 1915.

Arneth divides the polyvalent neutrophiles into five classes according to the number of the nuclear lobes:

Class I. Mononuclear cells subdivided into:

(a) Mononuclear forms (identical with Ehrlich's myelocytes).

(b) Forms with but slightly indented nuclei, (metamyelocytes).

(c) Forms with deeper invagination of nuclei, but no separation into separate loops or lobes, (true polymorphonuclear variety).

Class II. Cells with two distinct nuclear segments.

Class III. Cells with three nuclear divisions, subdivided into:

(a) Cells with two lobes and one loop.

(b) Cells with two loops and one lobe.

(c) Cells with three loops.

(d) Cells with three lobes.

Class IV. Cells with four nuclear divisions, with five subgroups.

Class V. Cells with five or more nuclear divisions.

Under normal conditions the percentage numbers of the different varieties remain fairly constant for one and the same individual, but they vary somewhat in different people. An average normal count, as given by Arneth, is as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>5</td>
<td>35</td>
<td>4</td>
<td>1</td>
<td>17</td>
</tr>
</tbody>
</table>

In certain diseases and abnormal conditions the nuclear conditions of the neutrophile leucocytes vary in a given direction, the changes in the first two classes being the most important. Accordingly, the sum of these two classes is taken as the index, and any increase, as compared with normal conditions, is termed a "shift to the left". Arneth's results are very interesting as they show conclusively that an absolute leucocyte count, per se, is relatively of little importance as compared with this differential count.—Editor.
PERSONALIA.

BIRTHS.

Peill.—To Dr. and Mrs. Ernest J. Peill of Siao-chang, via Tientsin, on March 31st, 1915, a son (Arthur Ernest).

Peter.—On February 14th, 1915, to Dr. and Mrs. W. W. Peter, a son, (Hollis William).

Salsbury.—On March 9th, 1915, to Dr. and Mrs. C. G. Salsbury, of the American Presbyterian Mission at Kachek, Hainau, a son.

Snell.—On March 17th, 1915, to Dr. and Mrs. J. A. Snell, of the Methodist Episcopal Church South, at Soochow, a daughter (Martha Amy).

Mills.—On March 31st, 1915, to Dr. and Mrs. Ralph G. Mills, American Presbyterian Mission, Seoul, Korea, a daughter (Marion Tracy).

MARRIAGE.

King—Shaw: At Kaifeng, February 6th, 1915, Dr. G. E. King to Miss C. Shaw, both of the China Inland Mission.

DEATH.

Irwin. At Chengtu, January 3rd, 1915. Margaret Vincent, the beloved wife of Dr. H. W. Irwin, of the Methodist Episcopal Mission.

Dr. Strange of Hangchow has returned home to offer for the war. A short time ago, Dr. Evans, one of his colleagues, was invalided home, so that the foreign staff of the Hangchow Hospital is now reduced, as a correspondent writes, to an irreducible minimum.

Dr. Dugald Christie has arrived at his station in Moukden from Scotland. While on his travels, he greatly enjoyed the ten days he spent in the United States, as he had the pleasure of meeting President Wilson at the White House, Mr. Bryan, and other notable and interesting people.

Dr. E. H. Hume left Shanghai for the United States on April 16th, 1915, to further the interests of the Yale Mission in Changsha.

Dr. Stafford M. Cox, of Shanghai, left for England on April 19th, 1915. He is bound for Servia, where he will join the Army Medical Corps.

Sir George Turner, kniited in 1913 for his research work in leprosy, a disease of which he himself became a victim, died on March 12th, 1915, in his seventy first year.

In a letter from England dated March 16th, 1915, Dr. James L. Maxwell writes: "Arrived home safely a couple of weeks ago, just three weeks from Shanghai. Quite uneventful journey, and no difficulties. . . . I am expecting to be appointed surgeon to one of the base hospitals in this country while on furlough."

Dr. A. M. Westwater, United Free Church of Scotland, Liaoyang, Manchuria, left Shanghai for London, per "S. S. Malta," on April 19th, 1915.

Dr. A. P. Laycock, C.I.M., Shanghai, left for home on account of his health on April 22nd, 1915.

Among recent arrivals are Dr. Frances M. Cunningham, S.P.G., Pingyin, Shantung, from furlough, who reached Shanghai on March 13th, 1915: Dr. and Mrs. Reeds, and Dr. and Mrs. Strothers, of the Canadian Presbyterian Mission.

NOTICE.

Shanghai Museum.

Frogs and newts, snakes, lizards, tortoises, are wanted for the Museum. If you are willing to help, please keep a big wide-mouthed closely covered bottle containing 75% alcohol (or strong samshu) for dropping such specimens into. Towards the end of the year place the specimens in a tobacco or grocer's tin just wrapped in a piece of cloth moist with strong alcohol, and send by Parcel Post. A few notes as to where found, etc., will increase the value of the gift. Out of pocket expenses will be gratefully paid on receipt of particulars.

Arthur Stanley, Curator.