The China Medical Journal.

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<th>Qualification</th>
<th>Mission</th>
<th>Station and Post Office</th>
<th>Proposers</th>
<th>Insertion</th>
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<tbody>
<tr>
<td>Russell E. Adkins</td>
<td>M.D., Univ. of Penn.</td>
<td>A.B.M.U.</td>
<td>Swatow</td>
<td>A. Wight, P. B. Cousland</td>
<td>Elected</td>
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<tr>
<td>Robert A. Anderson</td>
<td>M.D., Rush.</td>
<td>Hanges Synod M.</td>
<td>Fuzhong, Hubei</td>
<td>Dr. Hotvedt, Dr. Sjoquist</td>
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<td>Jessie H. Baldwin</td>
<td>M.D., Univ. of Kansas</td>
<td>Meth. Episcopal.</td>
<td>Taianfu, Shantung</td>
<td>C. F. Ensign, S. L. Koons</td>
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<td>M.D., Northwestern U.</td>
<td></td>
<td>Tientsin, Chihli</td>
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<td>Francis J. Hall</td>
<td>M.D., Johns Hopkins, Balt.</td>
<td>Am. Pres.</td>
<td>Peking</td>
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<td>C. M. S.</td>
<td>Foochow</td>
<td>P. Maxwell, H. T. Whitney</td>
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<td>M.B., B.Ch., Dublin U.</td>
<td>C. M. S.</td>
<td>Kienningfu</td>
<td>H. M. Churchill, J. M. Swan</td>
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<td>Hans Reber</td>
<td>M.D., Basle Univ.</td>
<td>Private practice</td>
<td>Canton</td>
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<td>Name</td>
<td>Qualification</td>
<td>Mission</td>
<td>Station and Post Office</td>
<td>Proposers</td>
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<td>Lena Hatfield</td>
<td>A.B., M.D., C. P. and S., Chicago</td>
<td>M. E. Mission</td>
<td>Foochow</td>
<td>H. N. Kinneer, Kate C. Woodhull, W. J. Berst, O. T. Logan, Lena Hatfield, Ellen M. Lyon, K. C. Woodhull</td>
<td>&quot;</td>
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<tr>
<td>Li Bi Cu.</td>
<td>M.D., Phila, Woman's M.C.</td>
<td>M. E.</td>
<td>Foochow</td>
<td>W. H. Jefferys, Lena Hatfield, Ellen M. Lyon, K. C. Woodhull</td>
<td>&quot;</td>
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<tr>
<td>Esther Anderson</td>
<td>M.D., Ohio Med. Univ.</td>
<td>A. P. M.</td>
<td>Soochow</td>
<td>(P. P. Consland, R. T. Shields)</td>
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<td>Maud Aura Mackey</td>
<td>M.D., Col. Med. U. of S. Cal.</td>
<td>A. P. M.</td>
<td>Paotingfr.</td>
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<td>Victor Schoch</td>
<td>M.D., Zurich Univ.</td>
<td>Basel</td>
<td>Kaying, via Swatow</td>
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Articles intended for The China Medical Journal should be sent to the Editors, who solicit contributions from all Medical Practitioners in China, Corea, Japan, Siam, or elsewhere.
A CASE OF MOLLUSCUM FIBROSUM.

[See Page 225.]
RESEARCH COMMITTEE.
First Interim Report, March, 1908.

PROLOGUE.

For the sake of members who have joined the Association since the general meeting in May, 1907, and for others whose attention has not so far been directed to this branch of our work, we would take this opportunity of reviewing the position of our Research Committee.

The honour of being the first to recognize the importance of investigating the diseases more particularly prevalent among the Chinese belongs to the Mid-China branch of our Association, which formed a Research Committee early in 1907. The subject of scientific investigation was under discussion at the General Meeting of the China Medical Missionary Association in May, 1907, when it was decided to form a committee for carrying on research work. It was further agreed that as the Mid-China branch already held the field, the subject that branch had already decided on should be made the matter for general investigation throughout the Association until its next general meeting.

The subject thus chosen was that of investigation into the faeces with special reference to the presence of worm eggs, amœbae, and other morbid manifestations.

It was decided at that time to attempt to publish an interim report at the beginning of the present year. The Chairman offers his apologies to the members that this report has been somewhat unduly delayed,
partly owing to unavoidable causes which prevented him from finishing the work sooner and partly owing to the late date at which he received other members' contributions.

It was hardly to be expected that after a few months' work only we could produce a very satisfactory report, but we believe that there is sufficient in this preliminary report to encourage members to persevere with the work in hand, and we trust to call the attention of others to the necessity of their giving a hand. I should add that the Mid-China branch had expected to be able to join in this report, but death and sickness among its members has now made this impossible.

Lastly we would greatly desire to publish a second report at the beginning of 1909, and for this would beg of members to let us have their reports and figures not later than December of this year. Such reports to be sent to the Editor, Dr. Jefferys, who will forward to me.

The contents of this interim report are:—
2. Report from Dr. G. Duncan Whyte, of Chaochowfu.
3. Report from Dr. James L. Maxwell, of Tainan, Formosa.
4. Report from Dr. H. H. Weir, of Chemulpo, Korea.
5. Statistics for Dr. Plummer, of Wenchow.
7. Summary and Remarks by the Chairman.

Extract from the Report for 1907, Pathological Laboratory, St. Luke's Hospital, Shanghai.

INFECTION WITH ANIMAL PARASITES IN 500 STOOLS
(INCLUDING DR. OSLEN'S 50).

<table>
<thead>
<tr>
<th>Name</th>
<th>Our cases of Total Infection</th>
<th>Dr. Olsen's cases of Total Infection</th>
<th>Grand Total</th>
<th>Per cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ascaris lumbricoides</td>
<td>247</td>
<td>26</td>
<td>273</td>
<td>54.6</td>
</tr>
<tr>
<td>Trichocephalus dispar</td>
<td>111</td>
<td>9</td>
<td>120</td>
<td>24</td>
</tr>
<tr>
<td>(trichiuris)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ankylostoma duodenumale</td>
<td>25</td>
<td>2</td>
<td>27</td>
<td>5.4</td>
</tr>
<tr>
<td>Opisthorchis sinensis</td>
<td>2</td>
<td></td>
<td>2</td>
<td>.4</td>
</tr>
<tr>
<td>Pasuolopsis buski</td>
<td>2</td>
<td></td>
<td>2</td>
<td>.4</td>
</tr>
<tr>
<td>Oxyuris vermicularis</td>
<td>1</td>
<td></td>
<td>1</td>
<td>.2</td>
</tr>
<tr>
<td>Strongyloides intestinalis</td>
<td>1</td>
<td></td>
<td>1</td>
<td>.2</td>
</tr>
<tr>
<td>Cases with positive findings</td>
<td>275</td>
<td>30</td>
<td>305</td>
<td>61.</td>
</tr>
</tbody>
</table>

W. H. JEFFERYS, M.D.
ELI DAY, M.D.

[For full report, see CHINA MEDICAL JOURNAL for March, 1908.]
Notes on the Results of Investigation of Faeces in the Chao-chow-fu Prefecture, Canton Province.

By G. Duncan Whyte.

Considerations as to Age-incidence.—In regard to opisthorchis sinensis:—Of 218 examinations made in the case of individuals over eighteen years of age, the ova of this fluke were found 42 times (19.2 per cent), while of 39 individuals below eighteen years, only one showed these ova (2.5 per cent).

The youngest individual showing infection with ankylostoma duodenale was aged nine. Five examinations were made in individuals below that age. Between the ages of nine and fourteen (inclusive) fourteen examinations were made, and a half of these cases showed ankyl. duoden., that is, 50 per cent. The difference between this percentage and that for infection with the same parasite amongst cases of all ages and occupations (i.e., 56 per cent.) is too slight to have importance attached to it, considering the small number of cases on which it is based.

In further investigation as to the period of age-incidence in cases of this infection, attention was confined to those of one class—the farmers. It was found that of these twenty-seven were not infected with the worm, and their average age was thirty-two years, eleven months. Of the eighty-seven infected farmers the average age was thirty-three years, a difference from which no reliable deduction could be drawn. It did not seem likely that any investigation into the age-periods of infection with ascaris lumbricoides, or tricocephalus dispar would lead to any information of value.

The largeness of the percentage of farmers infected with ankyl. duod. may be due to one of two causes, viz., either (1) the distance he would have to go to secure a drink of boiled water (tea) when he is engaged at his work, and his consequent indulgence in water that none of the other classes of men would be persuaded to drink, or (2) to his frequently being infected with the larvae through the skin as he works with his feet in diluted faeces. The fact that the larvae are not acting in a very concentrated mixture (as in most laboratory experiments) might explain the absence of a history of an inflamed condition of the skin.

The relatively low percentage of infection with opisthorchis sinensis shown by farmers, servants, boatmen, artisans, and others—i.e.,
the less wealthy individuals—as compared with the larger percentage of infected individuals (40 per cent.) amongst the richer literary and business classes, suggests that infection is not conveyed through unboiled water, insufficiently cooked food—or rather improperly cooked food—or any of the cheaper vegetables (such as the common leek and garlic so indubitably incriminated by Dr. Preston Maxwell in an article on Round Worm Infection. J. T. M. 1900). The fact that the infection with this parasite varies inversely with infection with the other three parasites here referred to is very suggestive of the medium of infection being totally different in the case of this particular parasite from the medium used by the other worms.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All others</td>
<td>Ascaris 75</td>
<td>Trico. 75</td>
<td>Ankyl. 60</td>
<td>Op. Sin. 11</td>
</tr>
</tbody>
</table>

It is interesting to note that both the individuals found to be infected with Dist. Crassum lived in the "Southern suburb" of this city. Ten more individuals have been examined from the same suburb, but showed no infection with this worm.

In connection with the symptoms resulting from infection with these worms, it may be noted first, in regard to opisthorchis sinensis that out of the 114 farmers 21 have symptoms of gastro-intestinal disturbance, and of these five show infection with op. sin. (24.8 per cent.), while 93 individuals did not complain of such symptoms, and of these only 11 (11.8 per cent.) showed the presence of op. sin.

A similar deduction is to be drawn from the 126 non-farmers over thirteen years of age. Out of 23 individuals complaining of the foregoing symptoms seven show infection (30.4 per cent.), while of the 103 who did not complain of these symptoms, only 20 (19.4) were infected.

In regard to ankylostoma duodenale, out of the 114 farmers 18 complained of symptoms of anaemia, and of these 16 showed the ova of ank. duod., 96 made no such complaint, and of these only 69 were infected; the percentages of infected individuals being, amongst the anaemic, 88.8 per cent., and amongst the non-anaemic—or rather non-complaining—71.8 per cent. infected with ankylostomes. Amongst the non-farmers it was found that amongst those complaining of anaemia fifty per cent. were infected with ank. duod., while amongst the "non-complaining" only 36.6 per cent. were infected, but these figures are based on only a small number of infected individuals.
ANALYSIS OF RESULTS OF INVESTIGATION OF FECES IN THE CHAO-CHOW PREFECTURE OF THE CANTON PROVINCE.

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>NO. OF CASES</th>
<th>ASCAR.</th>
<th>LUMB.</th>
<th>TRICO.</th>
<th>DISP.</th>
<th>ANKYLO.</th>
<th>DUODEN.</th>
<th>OPISTH.</th>
<th>SINEN.</th>
<th>DISTOM.</th>
<th>CRASS.</th>
<th>NONE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmer</td>
<td>114</td>
<td>83</td>
<td>87</td>
<td>85</td>
<td>15</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Student</td>
<td>19</td>
<td>12</td>
<td>11</td>
<td>9</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Business</td>
<td>28</td>
<td>18</td>
<td>22</td>
<td>10</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Servant</td>
<td>15</td>
<td>11</td>
<td>12</td>
<td>9</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Boatman</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Artisan</td>
<td>17</td>
<td>15</td>
<td>15</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>1</td>
</tr>
<tr>
<td>Others</td>
<td>15</td>
<td>14</td>
<td>12</td>
<td>7</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>42</td>
<td>31</td>
<td>28</td>
<td>31</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>1</td>
</tr>
</tbody>
</table>

The figures being arranged to show percentages, and the individuals gathered into larger groups, the results are as follows:

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>NO. OF CASES</th>
<th>PERCENTAGE OF INDIVIDUALS INFECTED</th>
<th>UNINFECT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers</td>
<td>114</td>
<td>72.8</td>
<td>76.3</td>
</tr>
<tr>
<td>Student and Business</td>
<td>47</td>
<td>63.8</td>
<td>70.0</td>
</tr>
<tr>
<td>Boatmen</td>
<td>7</td>
<td>43.3</td>
<td>47.0</td>
</tr>
<tr>
<td>Others</td>
<td>47</td>
<td>95.1</td>
<td>99.0</td>
</tr>
<tr>
<td>Unknown</td>
<td>42</td>
<td>73.8</td>
<td>69.6</td>
</tr>
<tr>
<td>Total</td>
<td>257</td>
<td>74.6</td>
<td>74.6</td>
</tr>
</tbody>
</table>

Report of Faecal Examination of 1,000 Cases Male and 50 cases Female at the Mission Hospital, Tainan, Formosa.

By James L. Maxwell, M.D.

I. 1,000 CASES MALE.

The total infected of these cases was 905. See statistics appended. As a matter of fact the actual number should probably be rather larger than this. For the sake of comparison I originally drew up my statistical tables for each 250 cases. On looking over these I note that the percentage of infection by each worm rises slightly from the first to the second and the second to the third sheet, while the numbers in the third and fourth sheet vary very little indeed. This, I take it, implies that with practice a single egg in a slide is recognised while in the earlier part of the investigation some of these escaped my attention. Had the numbers been the same in the first two as in the last two sheets the total infection would have amounted to 936, which is probably nearer the true figure. Then there were quite a number of cases which within a month or two of the examination had, with or without drugs, passed round worms and now showed no infection. It is therefore no exaggeration to say that practically the whole population is infected with intestinal parasites.
No eggs were discovered belonging to any other worm than the three common ones—the ascaris lumbricoides, trichocephalus dispar and ankylostomum duodenale. On two occasions the oxyuris vermicularis was found in the stools. This worm, though present among the Chinese here, does not seem to be very common. With the experience of these and many other cases, and further after careful inquiry among native physicians, I believe I am justified in saying that tapeworms are absent from this region.

No eggs of intestinal distomata have been found here, a rather curious thing, seeing how very common the infection with opisthorchis sinensis seems to be on the mainland of China about the same latitude and further south.

A few remarks about each of the three species of worm might be apropos:—

_Ascaris Lumbricoides._—All that need be said about this worm is that I feel certain that the 76.5 per cent, does not cover the total infection. Santonin is so easily obtained here now and so freely purchased by the natives that it is reasonable to believe that the actual percentage of persons from time to time infected is very much larger than here given. Age and sex seem to make little difference except that children appear to suffer even more than adults from the invasion of this worm, but here my statistics are not very satisfactory.

It is rather striking to notice that the percentage infections of different employments scarcely vary at all. From this we may presume that infection takes place in the first place by the medium of food.

In these 1,000 cases I have failed to find one where any form of ill-health, except occasional attacks of colic, was dependent on the presence of ascaris, and even the cases of colic from this cause were very rare. Flatulent distension of the bowels in children does, however, seem sometimes to be associated with the presence of a large number of round worms.

_Trichocephalus Dispar._—I have nothing of interest to remark about this worm, the eggs of which are very common. The presence of the worm seems productive of no discomfort to its human host.

_Ankylostomum Duodenale._—It was in connection with this blood-sucking parasite that I commenced investigation of this series of stools before our committee had decided on this line of research. The figures given in the appended statistical sheets give ground for some serious consideration and raise some problems which are not easily solved. As shown here nearly half of the male population suffers from this form of parasitic infection.
Is the word "suffer" a proper one to use in this connection? To solve this problem I made notes of the diseases for which the infected patients required treatment. I kept these notes for a series of nearly 500 cases and then gave up this line of investigation, as the results I obtained were absolutely nil. Every class of patient suffered from the infection, and no disease seemed to predominate; as a matter of fact, otherwise healthy men coming for treatment for chronic or acute eye complaints showed at least as large a proportion of infected individuals as those admitted for more serious complaints. It follows then, I believe, that we are not to regard every patient harbouring a few of these worms as a sufferer from ankylostomiasis, though one must confess that it is difficult indeed to say where the mere harbourer of the parasite ends and the patient begins. It seems probable that when not liable to constant re-infection a few parasites may be neglected, but on the other hand, all persons liable to constant infection become sooner or later true sufferers from ankylostomiasis.

This leads us to consider the point of how the embryo of the worm reaches its human host. If we turn to the relation of employment to infection and glance at the statistics I give on this point we shall notice how remarkable these figures are. We can divide the patients into two classes. First those employed in agriculture, in which I have included "coolies", as the coolies here are usually men employed on the land, who turn to this form of work to gain a higher wage and finally return again to the land; the percentage of infection here is nearly 70 per cent. The second class is of those of the leisured classes or engaged in business and sundry unclassified employments; the percentage of infection for all these is about 26 per cent.

How are we to account for so striking a difference? Let us look more closely at class I. As will be seen in the statistics given, this class is divided into farmers and coolies; about 50 per cent. infected, and vegetable and flower gardeners 90 per cent. infected. So here again we have a very striking difference. How do these people differ in their mode of living or methods of work? There is no difference as to their mode of living. How then as to their methods of work? I can only myself imagine one point about methods of work which could account for the immensely higher percentage of gardeners infected. This point concerns the manuring of the fields and gardens, and I shall try to work this question out more fully at a later date. For the present we can but note that while manure is applied to the field only at long intervals the gardeners are constantly engaged in watering their gardens with liquid manure. The one set then might be described as being liable to
intermittent, the other to almost constant infection. How does this infection act? It is natural to suppose now that it has been proved that the embryo can pass through the unbroken skin, that the legs frequently exposed to the attacks of the embryos form the seat of infection. This, however, it would be very difficult to prove, and there is no such disease as "ground itch" recognizable here. The 26 per cent. affected among other employments would in this case represent the proportion normally infected by the mouth.

The worm found in Formosa is the true ankylostomum duodenale. I have so far failed to find the American type.

For treatment I use thymol, and find it quite satisfactory; the only serious objection to the drug being in cases already at death's door from the disease where the danger is that the drug should give the finishing touch.

The embryo does occasionally develop in the rectum and is found free in the stools, though this is denied in some text-books. I have failed altogether in finding the Charcot-Leyden crystals stated in the books to be found in cases of infection with this worm.

II. 50 CASES FEMALE.

The statistics of these cases correspond very closely with those of the 1,000 male cases already given in detail.

Ascaris.—A universal infection at all ages; the percentages being only less even, because of the smallness of the numbers on which they are based.

Trichocephalus.—As in the male cases.

Ankylostomum.—Much less common than in males; the percentage, however, corresponding very closely with that of the non-agricultural classes, and thus bearing out the remarks already made. A severe ankylostomum infection in women is I find very rare.

### Intestinal Helminthiasis

**Analysis of 1,000 cases (male).**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000</td>
<td>905</td>
<td>765</td>
<td>491</td>
<td>436</td>
</tr>
</tbody>
</table>

**Note:** Of the ascaris cases, 84 showed x eggs only and 255 a mixed infection of x and ordinary eggs.

**Table of Percentages.**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>90.5</td>
<td>76.5</td>
<td>49.1</td>
<td>43.6</td>
</tr>
</tbody>
</table>

**Percentages of infection according to Age.**

<table>
<thead>
<tr>
<th></th>
<th>Up to 10 years.</th>
<th>10-20</th>
<th>20-30</th>
<th>30-40</th>
<th>40-50</th>
<th>Over 50 years of age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ascaris</td>
<td>96.9</td>
<td>75.1</td>
<td>79.4</td>
<td>74.4</td>
<td>77.8</td>
<td>74.1</td>
</tr>
<tr>
<td>Trichocephalus</td>
<td>31.2</td>
<td>55.1</td>
<td>48.8</td>
<td>44.3</td>
<td>57.1</td>
<td>62.9</td>
</tr>
<tr>
<td>Ankylostomum</td>
<td>3.1</td>
<td>35.7</td>
<td>45.7</td>
<td>45.7</td>
<td>44.3</td>
<td>30.7</td>
</tr>
</tbody>
</table>
In presenting a preliminary report to the Research Committee I regret to have so few cases to record and also that they are all from this hospital as it means that only a small area has as yet been dealt with here.

My cases comprise a series of 66 in-patients and are unselected, save for the fact that a few who were admitted for treatment for ankylostomiasis had been examined before admission and were not re-examined. But for this the cases are entirely consecutive. The eggs found are shown in the following table:

<table>
<thead>
<tr>
<th></th>
<th>Ascaris</th>
<th>Trichocephalus</th>
<th>Ankylostomum</th>
</tr>
</thead>
<tbody>
<tr>
<td>36 cases</td>
<td>20</td>
<td>49</td>
<td>20</td>
</tr>
<tr>
<td>35 cases</td>
<td>16</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>10 cases</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

The protozoa were not specially sought for, but are recorded in the cases where they were casually met with in the course of a routine examination. It may also be noted that in no case was it necessary to examine more than one film.

The frequency of the parasites may also be seen in the next table, which shows the frequency of mixed infections.

<table>
<thead>
<tr>
<th>Single Infections</th>
<th>Two kinds</th>
<th>Mixed Infections</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 cases</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Of these cases only one was admitted on account of his parasites—a case of ankylostomiasis—all others admitted for this disease being examined as out-patients and not being recorded in this series. Of the other 59 cases no less than 44 were under treatment for various surgical
ailments, which had no possible connection with the parasites and though it is conceivable that in the remaining 15 cases there may have been some occult relation between the disease and the worm there were none in which such a connection could be traced.

Beyond the fact of the great frequency of worms in this country and the presence of at least some which are not well known, though not in great quantity, there does not seem to be much of scientific interest to be drawn from this series, but it will be worth while to note the occupations of those affected with the ankylostomum. Of the total number of cases 20, exactly one-third, were affected with this worm. Their occupations are given in the following table:

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boatman</td>
<td>2 cases</td>
</tr>
<tr>
<td>Merchant</td>
<td>1</td>
</tr>
<tr>
<td>Farmer</td>
<td>12</td>
</tr>
<tr>
<td>Coolie</td>
<td>4</td>
</tr>
<tr>
<td>No occupation</td>
<td>1</td>
</tr>
</tbody>
</table>

Out of the whole number of cases examined there were 28 farmers, so that it may be seen that there is a distinctly larger proportion of that occupation among those affected with the ankylostomum.

Statistics of Faecal Examination of Stools of 13 Patients from Wenchow Hospital, by Dr. W. E. Plummer.

These statistics have been placed in my hands for publication and contain one or two points of interest to which I should like to call attention. The numbers are too small to reduce to regular percentage tables, but are as follows:

13 cases showing 6 infections: 1 with ascaris only, 2 with ankylostomum only, 1 with ascaris and ankylostomum, 2 with ascaris and trichocephalus and 1 with trichocephalus and ankylostomum.

The total number infected with ascaris is 4 = 30.8 per cent
The total number infected with trichocephalus is 3 = 23.1
The total number infected with ankylostomum is 4 = 30.8

Of the cases 10 are male and 3 are female; the latter showing but one infection of ascaris only.

Nothing can be gathered from the employments of the affected persons except in the case of the ankylostomum infected patients, of whom it is interesting to note that three out of four were farmers.

J. L. M.

Statistics of Faecal Examinations by J. Preston Maxwell, F.R.C.S.

I. 22 Stools from Boys in the Eng-chhun Mission School; and
II. 52 Stools from Patients in the Eng-chhun Hospital.

These statistics have been placed in my hands for publication, and I shall venture on but one or two remarks about them.

I. 22 Stools of School Boys. The almost universal presence of the round worm is very noticeable and bears out the suggestion that in
youth this parasite is particularly prevalent. The *Trichoecephalus* infection is strikingly small, but seems to correspond with an almost equally small percentage of infection among the hospital patients.

The freedom from *Ankylostomum* infection is very striking and made still more interesting by the fact that the one boy attacked was the oldest boy in the school (twenty years of age) and had already been engaged in farm labour.

II. 52 Stools of Patients. Round worms are present in a very much smaller proportion than among the school boys. Whip worms correspond with the infection among the boys as pointed out above. The "employment" infection with the *Ankylostomum* does not correspond with my Formosa statistics, but possibly an examination of large numbers might change this. The percentage, however, is in any case very much smaller than in Formosa. The percentage of amoeba infection seems very high.

J. L. M.

### Table of Percentage

<table>
<thead>
<tr>
<th>Total infected.</th>
<th>Asearis</th>
<th>Trichocephalus</th>
<th>Ankylostomum</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>22</td>
<td>21</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: Of the asearis cases 8 showed a mixed infection of *x* and ordinary eggs.

### Table of Percentage

<table>
<thead>
<tr>
<th>Total infected.</th>
<th>Asearis</th>
<th>Trichocephalus</th>
<th>Ankylostomum</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>37</td>
<td>33</td>
<td>9</td>
</tr>
</tbody>
</table>

Note: Of asearis cases 1 showed eggs only and 7 cases a mixed infection of ordinary and *x* eggs.

### Percentages of Infection according to age

<table>
<thead>
<tr>
<th>Asearis</th>
<th>Trichocephalus</th>
<th>Ankylostomum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 10 years</td>
<td>10-20</td>
<td>20-30</td>
</tr>
<tr>
<td>53.3</td>
<td>57.6</td>
<td>85.7</td>
</tr>
</tbody>
</table>

### Percentages of Infections according to Employment

<table>
<thead>
<tr>
<th>Farmers</th>
<th>Trade</th>
<th>Other employment</th>
<th>No employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asearis</td>
<td>59</td>
<td>76.9</td>
<td>57.1</td>
</tr>
<tr>
<td>Trichocephalus</td>
<td>3.4</td>
<td>...</td>
<td>14.3</td>
</tr>
<tr>
<td>Ankylostomum</td>
<td>17.2</td>
<td>23.7</td>
<td>14.3</td>
</tr>
</tbody>
</table>

Eight cases showed an infection with amoeba coli.

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**Summary and Remarks by Chairman.**

In connection with the foregoing papers and statistics a few remarks should be made. One point of considerable importance has been proved, viz., the prevalence of ankylostomiasis in the six widely separated places from which statistics come, that is to say, from four of the provinces of China and from Formosa and Korea. Unfortunately all
six sets of statistics come from coast cities or from places not far removed from the sea line. We require and hope we may be able to publish in the next of this series of reports some accounts from the inland provinces where very little is as yet known on the subject of the prevalence of intestinal parasites. In connection with the ankylostomum infection an almost unanimous deduction is the special prevalence of the disease among agricultural workers. We trust that this point may soon be finally decided by further statistics from other parts confirmed or disproved by corresponding figures of women patients. Such figures are still almost quite lacking and we would appeal to our women physicians to help us in deciding this question. Another point about which we are quite in the dark at present is the relative distribution of the old and new world parasites. We ourselves have seen only the former, which is also found on the mainland opposite Formosa. Dr. Logan has previously reported the presence of the American worm, and it would be of great interest to know what is the relative distribution of these two forms of the parasite.

Mention is made of the tape worm in only one report, that from Dr. H. H. Weir, of Korea. We believe the worm to be absent in South China and Formosa. Why is this and where on its southern route does the parasite stop?

The importance of the opisthorchis sinensis has been emphasised by Dr. Whyte and it seems to be present also in Korea. It is very difficult to believe that this parasite having been discovered in the north and south of China should be absent at all intermediate places. Will our members please keep this question of the prevalence of this worm before their minds?

The same applies to the distomum crassum. We now know that there are endemic centres in the Ningpo and Swatow districts; the worm is of great pathological importance; surely there must be other centres where it can be found. We record our heartiest thanks to the members who have joined in this report and once more beg most earnestly that others will hand us in papers for next year's report. We believe that many members are doing a little work on this subject, and we would beg of them not to suppose that because the number of cases they can examine do not run into many hundreds that therefore their results are not worth sending in. If each member can only examine a dozen cases send them along, and what individuals lack in numbers will then be more than made up in the grand totals.

James L. Maxwell, Chairman.
MALIGNANT TUMOUR OF NOSE.

Foochow woman, aged 38. See Page 225.
ELEPHANTOID GROWTH OF PENIS.
A Case of Molluscum Fibrosum, etc.

A CASE OF MOLLUSCUM FIBROSUM, ETC.

By M. Mackenzie, M.B., Foochow.

Molluscum Fibrosum.—I met this man some years ago, a day's journey south from Hinghua. His occupation consisted of selling cakes on the roadside. I induced him to come to hospital, giving a guarantee that the pendulous mass extending from front of chest wall could be removed. I estimated that this easily movable mass weighed thirty-five pounds. I expected to meet with huge venous sinuses and determined to block these by a series of ligatures along the base of the main tumour. Much to my regret, on the morning fixed for the operation, he left the hospital without asking leave; no doubt other patients put him against having an operation.

Cancer of the Nose.—Inoperable. This woman had two sisters who died from the same disease.

Elephantoid Growth on Penis.—Began sixteen years ago; at the close of last year pain started in the posterior surface of the tumour, due probably to the urine forcing a passage in that position. The scrotum was but slightly affected with the disease. After amputation I found the glans and prepuce quite normal. The case is interesting in showing the tumour almost confined to the penis. The amputated portion weighed two pounds. Filaria were seen in the blood.

THE INFLUENCE OF THE OPIUM HABIT ON MALARIAL INFECTION.*

By J. A. Otte, M.D., Amoy.

I have chosen to put my subject in the form of the title of this paper, but I might, perhaps, put the question I have in mind to answer as follows: Does the opium habit act as a deterrent or prophylactic to malarial infection?

First permit me to define the term of my subject. What is comprised under the word the opium habit? In a larger sense it may be defined as the introduction into the system of opium or its alkaloids by any of the well known channels. But I wish to discuss it in a more restricted sense, viz., smoking the drug, though in the discussion we will also have to touch upon its use in other ways. By malarial infection I mean the presence of the malarial parasite in any one of

*Conference paper 1907.
its different forms in the blood, though here, too, I wish to limit myself to cases where there are gross clinical evidences of infection.

In order to answer the question involved we should beyond and above all determine what the action of opium or its alkaloid is upon the parasite. Angelo Celli has taught us that quinine "appears to have a necrotic action on the protoplasm of the parasite" (p. 191). Does opium have this effect or any effect whatever on the parasite? Apparently no work has yet been done to determine the direct effect of the narcotic upon the blood cells or the parasite, so we must limit ourselves to gross clinical investigation, which proves that opium smoking directly affects the number of red blood corpuscles, diminishing them.

A second question requiring an answer is, Is opium, taken either occasionally or habitually, a stimulant, making it possible for the blood cells to more easily conquer the parasite? The temporary stimulating action of the drug, through the nervous system, is well known and cannot be denied. But while it is first a stimulant, it is secondarily a depressant; the order being reversed only in the alkaloid codeine, which is first a depressant, and then an excitant, primarily on the central functions (Ref. Handbook of the Medical Sciences, Vol. III, page 165). The ultimate action of the drug upon the secretions and metabolism is depressant (White's materia medica, 1896, p. 305). If such be the result of occasional doses, it is certainly no less true of the habitual use. We have all seen the reviving color and other evidences of an improved metabolism in our patients cured of the opium habit. Hence we must conclude that there is no therapeutic basis for considering the temporary stimulating action of opium antagonistic to the invasion of the malarial parasite.

Is opium an antiperiodic? That many of the Indian physicians considered it so is well-known. Chinese practitioners, and laymen as well, have for ages considered it as antiperiodic. Many of those coming to us for the cure of opium habit give as reason for taking it the desire to cure themselves of ague. Some of our best, the now somewhat ancient teachers, recommend opium and its alkaloids in the treatment of malarial fevers. Among these Bartholow in his Therapeutics and Materia Medica, p. 639, strongly recommends hypodermic morphia for the abortion of a threatened paroxysm; opium diminishes the febrile stage; the addition of morphia to counteract the unpleasant effect of quinine and to increase its therapeutic power. I readily concede much that Bartholow contents for. Indeed for years I combined pulv. doveri with all the quinine I gave in the treatment
of malarial fevers and recognized the value of its eliminating power through diaphoresis. But even then, in the treatment of malarial fevers, opium and its alkaloids can only be considered as a sedative, analgesic, and antipyretic. It is not really an antiperiodic.

There is, however, one alkaloid of opium, narcotine (anarcotine) whose antiperiodic utility is vouched for by such men as Bartholow, Ringer, Balfour, Rusby and others. But to be of value narcotine must be taken in doses of from two to five grains. This is about equal to from 40-200 grains of opium, as opium contains from one to ten per cent. of narcotine. This is an amount never taken at one time, even by the pipe. Hence we can safely conclude that opium is an antiperiodic of such feeble power that it may be excluded from the list.

Is opium in any sense a prophylactic to malaria? To this there is considerable favorable testimony. The Chinese hold it to be such.

In Gordon's Epitome of the Reports of the Medical Officers to the Chinese Imperial Maritime Customs Service, p. 215, Dr. Shewer, of Kiukiang says: "The use of the drug has the reputation, and usually does act as a prophylactic against malarial fevers. Two opium smokers having been attacked with tertian ague, which passed into the continuous or remittent type, their cases were looked upon as exceptional. In several persons who had given up the habit agues occur with or without diarrhoea."

In the same book, p. 216, Mr. Douthwaite says: "It is noted, however, that he (patient cured of the opium habit) again becomes liable to attacks of malarial fever and catarrhs—the narcotic, and a suggestive fact it is, affording him immunity from these disorders."

Dr. Anderson, of Fatshan, is "inclined to think that opium does act as a deterrent to the development of an attack" of malarial fever.

Dr. Henry Fowler, of Hsiao-kan, Hankow, says: "This is a very malarial district and the opium habit is most prevalent. My observation leads me to believe that the opium habit does diminish the likelihood of malarial infection."

Dr. R. Wolfendale, of Hankow, says: "Opium smoking does seem to diminish the likelihood of malarial infection."

Four other physicians, two of whom had only about two years of medical experience in China, are inclined to think that opium smokers are less liable to malarial infection. This, with possibly one doubtful exception, is all the favorable testimony I have been able to gather from the Customs medical reports to 1882 and in answer to seventy-four letters sent out all over the Empire, forty-one of which met with response.
Now for the reverse side of the question. Quoting again from the Epitome of Customs Medical Reports we have the following:

Dr. Dudgeon says that "among ague patients he has seen not a few who have been opium smokers. He has not been able to trace any antagonistic effect between opium and malaria, so as to enable him to pronounce with authority on the subject."

Dr. W. W. Myers, of Pagoda Anchorage, in a letter of January 27th, 1907, says: "At one time I made a lot of investigations as to the popular belief in its (opium) prophylactic effects against malaria. But I did not get hold of any fact or circumstance that I could fairly bring forward as accurately testifying to the alleged properties."

Dr. John M. Swan, of Canton, says: "I do not think opium diminishes the likelihood to malarial infection." With him twelve others, from whom I received replies, agreed; some stating their opinion very strongly and others in more moderate terms. Permit me to quote more fully from letters sent by three of the fraternity. These will illustrate the opinion of men in three widely separated regions.

Dr. J. Preston Maxwell, of Eng-chhun, says: "I believe that the opium habit has no influence whatever on the incidence of malarial fever."

Dr. W. H. Park, of Soochow, says: "As to statistics I have kept them myself and found that malaria is absolutely non-partial in attacking people living in malarial districts. There is no difference whatever. Opium users are neither less nor more subject to it than other people."

Dr. Sydney R. Hodge, of Hankow, says: "I find in hospital opium patients are as liable as others to contract malaria, and enquiries confirm this."

My own experience is in accordance with that of the above gentlemen. From March, 1889, to July, 1894, I kept a careful record of the number of opium users among all my male patients. I had, at that time, no intention whatever of determining whether the use of opium would prevent malarial infection or not. At the end of that period I had treated 12,493 different males for all the diseases we are called upon to treat. Of these, 1,749, or about 14 per cent., were opium smokers and 10,744 were non-smokers. Of the opium smokers 20 per cent. were treated for malaria, and exactly the same percentage of non-smokers were treated for the same disease. It seems to me that nothing more is necessary to prove that the opium habit has no influence upon malarial infection whatever.
The Mosquito-Proofing of Private Dwellings.

I have failed to find anything bearing on the subject under discussion in any of the available books on tropical diseases. Scheube among the "enfeebling circumstances" predisposing to malarial infection mentions opium smoking.

THE MOSQUITO-PROOFING OF PRIVATE DWELLINGS.

By James L. Maxwell, M.D., Tainan, Formosa.

I have been asked by Dr. Cousland to write a short paper on this subject. I suppose I have been asked to write this paper because I hold very strong opinions on the question of mosquito-proofing and have in my own case supported these opinions by the expenditure of a considerable sum to render my own house mosquito-proof. That I have been justified in doing this is proved by the fact that I am the only member of our mission who, after a number of years on the field, can claim to have completely escaped a disease which has in past days played havoc with our mission staff.

The ardent mosquito-proofer must be willing to meet good humouredly a good deal of chaff; he will probably be pooh-poohed by his medical confrères and openly laughed at by his lay brethren (and especially sisters). He may remember, however, that in this he will be in the good company of all leaders of reform movements.

For the sake of lucidity I shall confine my remarks to the style of houses required in the tropical district in which I live. The principle can of course be as easily adapted to other forms of dwelling.

For a house then to be properly mosquito-proofed two axioms should be stated.

1. The doors of exit from the house should be as few as practicable.
2. The verandahs should be themselves mosquito-proofed to prevent the necessity of screening a very large number of doors and windows.

It is quite essential that doors and passages to the outside should be doubly screened. By this I mean first a mosquito door, then a short porch and another mosquito door. If only one door is used it is quite impossible to prevent a few mosquitoes entering when people go out and come in. The only exception I should make to this rule would be the servants' entrance to the bath rooms. Here a single door will suffice if, and this is most essential, all carrying of water is done during the morning hours. If hot water for baths has constantly to be carried at night this door too must be doubly guarded. While dealing with the question of doors, a word must be said on the means used to keep these
closed. Undoubtedly the best plan for all mosquito doors is a double door with double spring swing hinges, i.e., spring hinges that swing both ways. At the same time it must be confessed that the hinges at present on the market are, for the most part, eminently unsatisfactory; the spring being very apt to snap after a few months' use, while to be any use at all they are very expensive. I must confess that I am disappointed with the hinges I have used so far, but the system is such a simple one that I am still willing to pay a high price for a hinge that will prove durable. Failing these nothing beats a simple iron coil spring for pulling the door to. The coil should be long, not very powerful and to avoid slamming, fixed in such a position that it is put as little on the stretch as is consistent with closing the door; such coil springs are very cheap.

In our houses verandahs, though pleasant all round a house, are only essential on the south and west sides to keep off the typhoon rains. The verandahs should be thoroughly screened through their whole extent, leaving no windows. The question then comes of how to deal with the windows on the side of the house where there are no verandahs. These windows must be made to open, at least in this region where outside wooden venetians are an essential. The question of these windows gave me much trouble at first, but I have now solved the problem very satisfactorily. My own windows are in sets of three—an inside glass pair of doors, an outside pair of wooden venetian doors, and a moveable mosquito screen between. The moveable mosquito screen is of the simplest. It is divided into two halves—an upper and outer half—which is nailed immovable, and a lower and inner half, which can push up. The lower half, when pushed right up, is held in that position by a spring which flies out on each side and prevents the window falling again. To let down the window one finger of each hand pushes the spring hinge back and the window falls into position. A rough sketch is here given of the springs holding the lower window frame up when raised. The arrows show where the fingers must push to collapse the springs and allow the windows to fall.

This has the great advantage that a window cannot be half closed by a careless servant, and if not left fully open, in which case the negligence is clear to everyone, the window must be closed entirely; it cannot be left in any intermediate position. The springs were
bought in our out of the way city here, and so could probably be obtained without difficulty at any important centre.

Three difficulties are constantly raised by ignorant objectors to the use of mosquito screens. These refer to light, heat, and air.

Light.—People sometimes speak of mosquito-proof houses as if their dwellers were consigned to the eternal gloom of the inhabitants beyond the Styx. This conception is wholly incorrect. I remember a gentleman coming into our house and remarking: “Surely these huge glass panes are liable to be broken by typhoons.” The “panes” were not of glass but of wire gauze, but the difference in light was so slight that the mistake was easily made. A room is hardly darkened at all by the use of mosquito screens of a suitable material. I constantly take photographs in our mosquito-screened verandah and give no longer exposure than I should give in the shadow outside.

Heat.—This is a point which is easily determined with scientific accuracy. I kept records of one of our verandahs before and after screening and could not determine that the screening raised the mercury one degree of temperature.

Air.—“I could not sleep in a mosquito-proofed house”, said one lady to my wife, “I must have air.” Needless to say that lady had never spent more than an hour of her life in a mosquito-proofed house and certainly had never slept in one. Yet she slept every night under a heavy mosquito curtain while we for six years have been able to do without these encumbrances. That lady has suffered from many attacks of “fever”, despite her mosquito-curtained bed while we have escaped. There is only one objection to these mosquito-screened rooms, and that is a curious one. My wife and I find it so close and uncomfortable to sleep under mosquito-curtains, after so long being free from them, that it seriously interferes with our pleasure in staying away with friends. Mosquito-proof houses are, especially in the evening and night when we need it most, the most airy houses in the East.

Of course it is necessary to be careful in the choice of the wire gauze. We have ourselves used for six years what is called pearl wire cloth bought from Montgomery, Ward & Co. of Chicago; as far as I know this is better than any English wire gauze. I hope, however, during my time on furlough to inquire more particularly into this question. It is possible to get a wire gauze which does decidedly darken the houses, and this of course is to be avoided. It is also very easy to get a cheap gauze, which is destroyed by the weather very rapidly. The wire cloth mentioned above will last, in the most exposed positions possible, for about five or six years, and in less exposed situa-
tions for, I should think, at least ten years or more. The cost of screen­
ing a whole house here is from $200 to $300 Mexican, and considering the heavy duties and increased cost of labour and all material here the cost should not be more than about two-thirds of this on the mainland.

Lastly there is no subject where the proverb, "'Actions speak louder than words'", is more true than about mosquito-proofing. Seven years ago, when I came to Formosa, there was not a single mosquito-proofed room in the whole of the south of the island. Nothing but good humoured jibes met our early efforts at mosquito-proofing. Now there is scarcely a single house, missionary or merchant, where mosquito-proofing in part or whole has not been carried out; the fever incidence has fallen very markedly, and the only house where fever is prevalent is the house which still contains the bitterest opponents of the use of mosquito screens.

While not so directly concerned with this question, though kindred to it, is the question of mosquito-proofing the dormitories of our schools. Only this, I believe, will quite prevent the wicked (there is no other word to use) habit still prevalent in some schools of sleeping more than one child under the same mosquito net, even though one of the children may be suffering from pulmonary tuberculosis and thus making our schools centres for the spread of tuberculosis.

A PLEA FOR THE PREVENTION OF MALARIA IN MISSION SCHOOLS.

(With notes on the systematic giving of quinine to the boys in the Changpoo school.)


To those who practice the prophylactic treatment of malaria regularly and systematically, in the various schools, for the health of which they are responsible, such a heading as the above may seem out of place and unnecessary, and yet from personal enquiries made of many doctors, I find that such a plea is not only justifiable but necessary, for the majority of those asked about this question frankly admit that malaria occurring in the boys and girls of the various schools is only treated when fever is present, and nothing is done as a rule to prevent subsequent attacks. It may be the good fortune of some to be placed where malaria is not frequently met, but in many places where it is omnipresent, in the rush of routine hospital work, prophylactic measures are forgotten, the health of the scholars suffers, needless work
is'added to the already overburdened physician, the reputation of the school deteriorates, and as a result parents are unwilling to send their children to a school where repeated attacks of malaria seem the order of the day.

Especially at this crisis in the educational work of China is this question of extreme importance, for never before have mission schools had such keen competition to contend with as they have to-day from the newly-established government schools which have sprung up so rapidly all over the empire, a competition which bids fair to be a serious menace to the church getting hold of the youth of the nation and training and instructing them in useful sciences and instilling into the young mind the truths of Christianity, which is the ultimate aim and object of all educational enterprise.

If our mission schools could show, as it were, a clean bill of health, could the scholars be able to say that during the term in school they had better health and less fever than in their own home, such a testimony would have weight and parents would be the more willing to send their children to such a school, even should the competing Chinese school be equal in every other respect to such a mission school. With this preliminary justification of this letter, let me briefly state the results of the systematic giving of quinine in the boys' school in this city. The district where this experiment was carried out is in the Fukien province, about midway between Amoy and Swatow, and some ten miles inland as the crow flies. It is a low lying, rice growing district, and malarial and filarial fever, like the poor, are ever with you. The school is not a large one, only numbering fifty, including three Chinese teachers, and almost all the boys reside on the premises. The term I speak of began on the 1st of March and ended on the 5th of July, 1907.

When the boys assembled each was in turn examined and a malarial history taken, liver and spleen were carefully examined and notes made, but unfortunately no blood films were taken, as my microscope had not then been replaced after the riots and the burning of the hospital building by the Chinese last year. For convenience let me divide the history of malaria, as given by the boys, into three groups:—

1. Those who had it frequently, and by that is meant at least twice a week, and not a few were having daily attacks.

2. Those who had it occasionally, i.e., once a week or once a fortnight.

3. Those who had it seldom or never.

Belonging to the first class were forty out of the fifty, or eighty per cent.; in the second were only four, or eight per cent.; and of the third class were six, or twelve per cent. Again let me divide the conditions found in the spleen into three groups:—
1. Those markedly enlarged, i.e., when the spleen could be felt at least extending to the umbilicus.
2. Moderately enlarged, i.e., when the spleen could be felt by palpation to extend well beyond the costal margin.
3. Those with no enlargement.

Belonging to class 1 were 14, or 28 per cent. Class 2 had 27, or 54 per cent., and in class 3 were the remaining 9, or 18 per cent. The ages of the boys varied from 8 to 19 years, the average working out at 14 years. The giving of quinine was not left in the hands of either teachers or boys, but the doctor on paying his visit to the school had the roll called and each boy in turn came up to the front and received his portion, which was swallowed before he was allowed to return to his seat, so that there could be no deception or selling the quinine afterwards, as has been practised in some schools. Sulphate of quinine was used, made up into pills with a simple excipient, and this was found both simple and cheap. The plan of administration was as follows: During the first week each boy got a pill containing 3 grs. every day, during the second and third weeks each boy had a 2 gr. pill four times a week, the fourth and fifth weeks it was reduced to 2 grs. three times a week, and from then till the end of the term 2 grs. twice a week. This plan worked well, and although I do not advocate it against all methods, I think for simplicity and efficacy it will be difficult to beat, and gave with me infinitely better results than giving larger doses at longer intervals, which method I had previously tried.

In this particular instance the results were most encouraging, almost beyond belief, for during the whole term of 18 weeks there were only 23 cases of fever occurring, and one boy alone was responsible for five of these. Of these 23 cases 9 occurred among the boys with markedly enlarged spleens, 7 occurred among those whose spleens were moderately enlarged, and 7 occurred in those whose spleens were normal. It is also interesting to note that no case occurred in those who said they never had fever, showing that the histories the boys gave were of some value. According to the malarial history obtained, at the very lowest estimate the number of cases of fever should have been 1,512 during the term, and to have reduced that number to 23 was sufficient reward for any time and energy expended in attempting the experiment. To the quinine in great measure was this result due, but other factors helped to bring about this desirable end.

The 14 boys with markedly enlarged spleens were under special treatment for that and were given increasing doses of iron, arsenic, and santonin, and were painted locally with liq. iodii fort. and in some cases had a sun bath for half an hour after the application; whether the
OSTEO-SARCOMA OF INFERIOR MAXILLA.
Osteo-Sarcoma of Inferior Maxilla.

sun bath had any direct influence in reducing the size of the spleen or not, it is difficult to say, but in these cases the reduction was more marked, but it may have been that these cases responded more to treatment than the others. In every case at the end of the term there was an appreciable diminution in the size of the spleen, and that in itself is a most desirable thing. Again it must be admitted that when fever occurred in any boy his quinine was increased for a week, and perhaps he was also given some other anti-periodic.

Another thing that must not be omitted, was the regular exercise each boy had to take. Physical drill was regularly performed by all the boys, except in special cases, when it was forbidden by the doctor, and care was taken that the bedrooms of the boys were not overcrowded, and these things, combined with regular hours for meals, and going to bed early, all helped in thus reducing the incidence of malaria. The cost of such an experiment is very trifling; a little over ten ounces of quinine were used, and cost at that time about $5.50, so that no one could object to it on the ground of expense.

It is hoped that this letter may stimulate some, who as yet have made no attempt to reduce the incidence of malaria, to give this method a trial and see if the method of getting the system under the influence of quinine and keeping it so, may not have the same happy result with them as has been the case here. In conclusion I would like to record my thanks to my colleague, the Rev. H. W. Oldham, for his invaluable help in making the experiment a success.

OSTEO-SARCOMA OF INFERIOR MAXILLA.

By Harry B. Taylor, M.D., Anking.

The history is as follows:—

Shop-keeper, aged 33, from Tai-hu, Anhwei. Tumor began twelve years ago as a small lump on external surface of right half of lower jaw. Growth slow until last year or two, during which time enlargement has been rapid.

Tumor involves right half of inferior maxilla to within $\frac{1}{2}$" of temporo-maxillary articulation. Left half of bone shows involvement to angle of jaw. The lower incisor teeth project from upper surface of tumor which within the mouth is lobulated, forcing tongue back to fauces. On the inferior surface of tumor are several ulcerated areas, exposing the bony structure of the growth.
On being told of the serious nature of the operation for his relief, the patient went home to arrange his affairs, promising to return later for operation.

If he does, which I think he will, you shall have the specimen for the museum, if you want it. ["We do!"

POST-GRADUATE GLEANINGS.

By Geo. F. Stocke, L.R.C.P., Ichang.

That was a wise saying of an African missionary on his return to his station that he would never again go home for his furlough until he was supplied with a medical certificate saying he was strong enough for the ordeal. It is the common experience of most missionaries that their societies terribly overwork them at home and that deputation work there often proves a far greater strain than full mission work in a foreign land, and in my own limited medical experience in China I have observed that there is a very high mortality amongst missionaries just returned from their furlough. They often come back physically and nervously unfit, and instead of being the stronger for the change, instead of returning with new plans and a freshly fired enthusiasm, they may often be truly classified as "returned empties".

I was, however, more fortunate than many, for the organisng secretary of our foreign mission was an old Indian missionary himself and saw to it that the men at home did not have too much to do. I was able also to put in some four months at medical studies and I propose to pass on to my brother medicals in China a few things I learned, some of which I have already tested and all of which I expect in the future will prove of value to me in hospital work.

To some men what I may have to tell will doubtless be a very old story, but I feel sure there are some members of the Association who will be as glad of the few hints I now give as I was to hear them from the lips of the teachers best qualified to speak, in Edinburgh and London. With a further apology for the necessarily rambling nature of the jottings let me plunge at once in medias res.

Manson on Malaria.

Many will envy me the privilege of sitting at the feet of so illustrious an authority as Manson. Here are a few scraps from his lectures and clinics on malaria.
"The principal drama of malaria is played in the internal organs. Finger blood may only have one parasite in the field, while every red cell in the brain may contain a parasite."

"Not only is there destruction of red cells, but those left have their haemoglobin value lessened. All the white corpuscles are diminished and the polymorphonuclears are much decreased—the opposite of septic trouble where they are increased. The large mononuclears are relatively increased even up to 20 per cent., and this is very important, for it means protozoal infection. Thus it also occurs in trypanosomiasis and the infection by the Leishmann-Donovan bodies."

"In Africa crescents are very hard to find, but the same patients show them well in England."

[Here may I be allowed to interject a personal note. During the past three weeks my colleague, Dr. Graham, and myself have examined the blood of every case of possible malaria which has visited the hospital. Every day we have found one or two cases showing crescents. This is a very different state of things from two years ago when a crescent blood was considered a rare specimen, and probably accounts for the high malarial mortality in this district last year and the epidemic of severe cases we are having now. All our aestivo-autumnal cases have yielded more or less rapidly to small doses of quinine by the mouth.]

"The symptoms in the pernicious cases come on very suddenly and life is in danger. The hyperpyrexia type is usually diagnosed sunstroke or heat-apoplexy. This is especially common in Hongkong, and, post mortem, the cerebral vessels will be found full of organisms. In other forms the patient may suddenly become comatose; it is generally diagnosed "alcoholism". There is a choleraic type accompanied with purging and vomiting, and this may even be epidemic in nature, and in tropical districts one should always be suspicious of malaria. Then there is a dysenteric type, but the temperature is high. Malignant malaria is a very common cause of infantile mortality in malarious districts; the diagnosis is usually "convulsion". A comatose case in a child may be saved by energetic quinine treatment. A specimen from the brain may always be obtained without the necessity for a post mortem by perforating the orbital plate of the skull through the conjunctiva with a strong hypodermic needle."

"Quotidian periodicity is a trap for false diagnosis. Quotidian periodicity is not characteristic of malaria, but tertian and quartan are. Quotidian periodicity is common to tuberculosis and sepsis, liver abscess, syphilis and calculi."

"Quinine must be applied to the blood to be of use as a diagnostic. If given in solution the stomach and bowels must be in order. It is often preferable to give it hypodermically and by that is meant an intra-muscular not a subcutaneous injection."

**Manson on the Treatment of Sprue.**

"In all cases of intestinal flux always personally inspect the stools, and if the case is at all chronic a digital examination of the bowel must be made and always a microscopic examination of the blood.

We have arrived at the treatment of sprue empirically. Milk is the only drug given and the only food allowed; it combines the maximum of nutrition with the minimum of work for the bowel. Don't try and fatten your patient; just keep body and soul together. Keep him in bed. Allow 2 or 3 pints of milk in the 24 hours, dividing it into small doses every two hours. Let him take it as nature
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gives it—guttatim! When the patient is improving don't increase his diet; starve him with milk till he fights you for food! Then go up gradually to eight pints per diem. After his stools have been normal for six weeks, then begin to add an egg and finally minced meat. Fruit is very useful; apples, bananas, and strawberries especially."

OTHER FEVERS.

I could obtain practically no advice or information regarding the simple continued fevers known by the local designations of every treaty port in China. Who will be the first man to give us real light on these puzzles? But we may all make sure by a blood examination that we do not include a case of relapsing fever amongst them. For an authority at the London Tropical School told us: ‘‘In relapsing fever there may be no relapse at all; only the first fever.’’

BLOOD WORK.

I wonder are there any members of the Association who do not make satisfactory blood examinations? If so may I introduce them to the wonderfully effective Leishmann's modification of the Romanowsky stain?

Burroughs and Wellcome supply soloids of this stain, and all that is needed in addition is some pure methyl alcohol to dissolve the soloid and distilled water (filtered rain water does splendidly) for diluting the dye during the process of staining. It is very easy to work, so easy that our Chinese assistant, after watching us a few times, made a perfect slide himself, and now all we require to do is to look at the specimens he places for our inspection and diagnosis. With this stain blood work is a real delight; each film is a perfectly beautiful picture, and one's certainty in diagnosis is considerably enhanced.

One other really good thing in blood work I learnt from Dr. Gulland, the blood expert in Edinburgh, a simple method which every surgeon should regularly employ in his wards. It is known as the "Glycogen Reaction." The reagent is made up of iodine, 1 gram; pot. iod., 3 grams; distilled water, 100 cc; gum arabic, 50 grams, and a drop of this is placed on the dried film of blood to be tested. The red corpuscles are thereby stained yellow and the white corpuscles are pale, but if there be any septic infection within the body these white cells will show granules of glycogen stained brown with the reagent. This is a most delicate test of sepsis and is present even when leucocytosis is absent. By its means one may readily diagnose between septic and a malarial rigor. It is a grand test in appendicitis. The granules may be seen diffused throughout the protoplasm of the
polymorphs in mild cases, as minute dots in cases further advanced, but if large and protruding grains of glycogen are seen the case is a severe one and the surgeon should operate at once. Gulland thus tabulates the significance of "leucocytosis":

<table>
<thead>
<tr>
<th>Present (up to 15,000)</th>
<th>Absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Physiological.)</td>
<td>(Pathological.)</td>
</tr>
<tr>
<td>Pregnancy.</td>
<td>Cinchonism.</td>
</tr>
<tr>
<td>After parturition.</td>
<td>Post-haemorrhagic.</td>
</tr>
<tr>
<td>After a rich proteid meal.</td>
<td>Yellow atrophy of liver.</td>
</tr>
<tr>
<td>Exercise.</td>
<td>Gout.</td>
</tr>
<tr>
<td>Cold bath.</td>
<td>Inflammatory and other organismal infections; the pneumococcus causes the greatest increase, the coli communis the least.</td>
</tr>
<tr>
<td>Just before death.</td>
<td>Pure influenza.</td>
</tr>
</tbody>
</table>

"If the leucocytosis is slight in a severe infection the prognosis is very bad."

"Poikilocytosis is really no guide in pernicious anaemia, as it occurs also in cases of chlorosis. What is important is the very large sized red cells seen, often showing nuclei or basophilic degeneration. During a relapse the characteristics are—plump red cells with many megalocytes, a little poikilocytosis and some nucleated ones."

TO TAP THE CEREBRO-SPINAL FLUID.

The best place to make the puncture is between the 4th and 5th lumbar vertebrae, where the space is large and the dura mater firmly attached to the bones, and so is not easily pushed forwards by the needle. The best place to insert the needle is shown in the diagram. A line across the upper level of the iliac crests crosses through the spine of the 4th lumbar vertebra. Go half an inch below that line and a little to the left of the middle line.

The patient's posture. If well enough he sits in a chair with the knees apart and stoops till his hands rest upon the ground and the needle is passed in a direction slightly upwards.

If in bed he lies in the left lateral posture with head bent upon the chest and knees flexed upon the abdomen and his hands under his thighs, and the needle is passed horizontally forwards.

The fluid. Half a test tube full may be safely drawn off, but if more than that is taken, headache and sickness may follow. The fluid
is normally clear like water, but in pneumococcal meningitis it is turbid, in jaundice yellow, and in the meningitis of middle ear disease it may contain pus.

**Surgical Technique.**

*The patient's skin.* The night before operation scrub all the area that the dressings may touch with green soap and hot water. Shave all the parts. Put on a soak of soda all night to soften the epithelium and an hour before operation scrub the skin thoroughly again and apply a 1-2000 perchloride dressing.

*The surgeon's hands.* The surgeon should always use rubber gloves for septic cases. He should wash his hands in water sufficiently hot to cause them to perspire and use soap till they are like a washerwoman's. Then scrub with a nail brush for fully ten minutes. Then five minutes in methylated spirit and a final last wash with 1-2000 perchloride.

*Instruments.* Do not boil them in a soda solution, but in a weak lysol one, and they may soak in it all night without fear of rusting. Knives may be boiled if soft leaden sheaths are made for the blades and their cutting capacity will not be impaired.

*Catgut.* Dry iodine catgut is very useful and is probably the best and does not irritate the tissues unduly. It is easily made. A roll of catgut eighteen inches long is rolled up and bound and soaked for eight days in an iodine solution composed of iodine 1, KI. 1, distilled water 100. Then pour off the iodine solution and place the catgut with sterilized forceps into a sterilized vessel containing calcium chloride and it will be dry in twelve hours and ready for use.

Bier's treatment by congestion in joint affections was highly thought of in Edinburgh. In cases of tubercular joints it is only necessary to bandage above the joint till distinct venous discoloration of the limb below is produced, and this need only be employed for two hours daily. This treatment also markedly eases the pain in gonorrhoeal joints.

The fresh air treatment in cases of surgical tuberculosis was also advised. Such patients were kept out on the hospital balcony all through a Scotch winter and even in a London fog improvement was marked.

I trust these very scrappy jottings, selected at random from my notes, may prove of value to some, and I shall be always glad to hear if any word in this article has helped a man in any difficulty or enabled him to perfect himself in diagnostic methods.
LADIES AND GENTLEMEN:—It is my first pleasure and duty to thank you for the honor you have done in electing me to the position of President of the Central China Medical Association, and I do so with a strong feeling of unworthiness as I think of those who have preceded me in this office and who, in and through our Association, have done so much for the advancement of the cause we represent. More especially is this feeling borne upon me as I consider the life and service of him who immediately preceded me, our late honored president, Dr. Sydney R. Hodge. It is just one year ago that he delivered his last presidential address, in which it seemed to me he struck the keynote of a larger and wider medical missionary opportunity and duty in his introduction and advocacy of "research" work.

In doing this he placed, as it were, a capstone to the monument of his long years of magnificent service. Little did we then think that it would be left to us to go forward in the work without his valued counsel and assistance, and I am sure that you are one with me in the feeling, that as time goes on and the acute pain we felt as his departure becomes less oppressive, that the sense of loss in our Association becomes greater.

Dr. Hodge was, I believe, the first to propose the organization of this Association, and our debt to his memory is great, and it seems to me very fitting that this should be shown in some tangible form.

He was the pioneer in many phases of our work which we now accept as a matter of course, often not knowing the struggles at their beginnings.

Amongst these and one of the latest of general acceptance is that of the training of competent nurses. During the past year we laid down plans for a thorough course of training with examinations by appointees of the Association which will present diplomas and medals to the successful candidates. In addition to the diploma and medal to be granted to the successful candidates, I wish to propose that above and beyond this we create a "Hodge" medal to be given to the one standing highest in character and attainments at each graduation examination. If the Association approves, I shall ask the privilege of donating such a medal.

In addition to the honor you have done me in electing me president of the Association, the committee in charge very kindly selected the
subject on which I should address you to-day. The subject chosen, "Hospital Economics" is, I fear, quite too large a one to more than touch upon in the short time at our disposal. The economics of hospital "construction", "appliances", "antiseptics", "sterilization", "attendants", "assistants", "charges", "purchasing", etc., could each take a session and be discussed with profit.

I have taken the liberty of confining my remarks to the last mentioned—the economics of purchasing supplies—because it is a question that is always with us, the one above all that can be least criticised and the one which gives the largest return with the least amount of time expended.

In all the various phases of "economics" above enumerated, with the exception of the one we shall make the subject of our discussion, we are up against the elements of "economy" versus "efficiency". To a certain extent this is true regarding the last also, but I would eliminate the question of "quality" by saying that the comparison of prices I shall give you, represents differences in the cost of goods of the same quality.

The first principle of business is to buy in the cheapest market and sell in the dearest. Our vocation in life is not commerce, but we ought to observe the principles of business in the disposal of the funds given to, or earned by, us for our work, and the first half of this principle is for all of us.

The original sources of supply are naturally the lowest priced, but this usually applies to the purchase of large quantities, and in these days of trusts and combines we are as consumers, usually denied the right to buy from such original sources. An apparent exception to this rule is found in the case of rectified spirits. The price at the refinery in Hongkong in barrel lots, compared with the price in Shanghai in 5-gallon lots, shows a difference in favor of the latter of 45 per cent., but we must bear in mind that the source of supply is before Shanghai and is not probably Hongkong. Then again, it may happen that the producers of one country may be able to undersell those of another on account of being at the original source of supply of some commodity that goes to make up the finished product, or there may be greater liberality in excise regulations, as for example in alcoholic preparations.

In estimating the exact cost of goods we must take into account the cost of packages and packing. Two British firms I have in mind show a difference of over 150 per cent. in these items.

The factor of freight is a very important one and the final cost to small buyers is much larger than to the purchasers of large quantities
unless some combined buying plan, such as our purchase committee works on, is followed. The difference between buying in small and in large quantities is sometimes over 100 per cent. I shall presently draw your attention to some such items. We may lose as much as 50 per cent. by confining our buying to a single firm. Again manufacturers sometimes sell their products at lower prices in foreign countries than at home.

The last factor I shall note is the personal contact of buyer and seller. I remember once, in America, buying conditionally, some goods from the representative of a British firm. Shortly after I went to England and bought exactly the same goods from the same firm at a difference in price that paid all the expenses of my trip. In about the only instance where our committee came in direct contact with the seller, we secured one-half penny per ounce reduction on quinine from the lowest cable quotations, saving in this one purchase, over and above the general saving, the sum of $40.00. Our net saving on last year's purchase of quinine was $460.00.

In the verbal reports which the purchase committee has presented it has been intimated that a saving of from 45 per cent. in the case of one hospital down to 15 per cent. in the case of the best buyer has been effected. Careful examination confirms this favorable estimate.

Up to the time of the formation of the committee, all of our members were in the habit of placing practically all of their annual or semi-annual orders with one firm, and the firms favored were either British or Shanghai.

The committee first received estimates of the probable wants from each hospital. These estimates were tabulated and prices asked on approximate amounts from a number of reliable firms.

The estimates were classed, so that the orders could be divided if found advisable, and we finally bought from eight different firms. I am unable to give the exact saving of each buyer, as I did not know the former prices paid, but for comparison I have taken an average order of this year and dissected it with the following result. The comparison is between the ones purchased from and the next best:

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<tr>
<th>Category</th>
<th>Percentage Saved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroform</td>
<td>the same</td>
</tr>
<tr>
<td>Alcohol</td>
<td>saved 25 per cent.</td>
</tr>
<tr>
<td>Extracts</td>
<td>35</td>
</tr>
<tr>
<td>Spirits</td>
<td>10</td>
</tr>
<tr>
<td>Tinctures</td>
<td>15</td>
</tr>
</tbody>
</table>

If opium had been taken from this list the gain would have been 20 per cent. It is a fact worth noting that every tincture was cheaper, with the exception of opium, which was 50 per cent. dearer.
The net cost of the above items was £8.0.5, and if bought from the next lowest firm would have cost £10.18.4, a saving of £2.17.8, which equals 25 per cent. Above this we get an additional 5 per cent., but as the other firm offers a discount of 15 per cent. it shows a net saving of 15 per cent.

On the purchase of goods under the heading "general drugs and instruments" the purchaser lost 4 per cent., but this is accounted for by the fact that most of the order was not carried by the competing firm, and the comparison therefore is of only a very small part of the order, and the total loss amounted to only $1.00.

I shall now note some of the variations in prices quoted the committee.

<table>
<thead>
<tr>
<th>Item</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absorbent Cotton</td>
<td>37 1/2</td>
</tr>
<tr>
<td>Absorbent Lint</td>
<td>9</td>
</tr>
<tr>
<td>Absorbent Gauze</td>
<td>500</td>
</tr>
<tr>
<td>These three combined</td>
<td>218</td>
</tr>
<tr>
<td>Iodine</td>
<td>25</td>
</tr>
<tr>
<td>Iodoform</td>
<td>28</td>
</tr>
<tr>
<td>Pot. Iod.</td>
<td>46</td>
</tr>
<tr>
<td>These three combined</td>
<td>33</td>
</tr>
<tr>
<td>Quinine</td>
<td>160</td>
</tr>
<tr>
<td>Sunlight Soap</td>
<td>100</td>
</tr>
<tr>
<td>Condensed Milk</td>
<td>35</td>
</tr>
<tr>
<td>Petrolatum</td>
<td>318</td>
</tr>
</tbody>
</table>

Our combined purchases for the year amounted to not less than $10,000, and taking 15 per cent. as a basis of saving, and this represents the saving of the one hospital that formerly bought at lower rates than any other; it gives a net saving of $1,500 for the year—no small sum to use for the betterment of the work of twelve hospitals in one year.

A word as to how we save in detail. Alcoholic preparations are bought in Europe and under an extra discount for quantity. Iodine preparations are bought in Japan, and the saving effected is altogether in the freight and packing. Quinine is bought in 100-ounce tins and upwards of 2,000 ozs. at a time. Condensed Milk comes direct from the manufacturers in lots of not less than 50 cases, with an extra discount because of the philanthropic character of our work. Sunlight Soap comes direct from the factory, in lots of not less than one ton. General drugs and instruments are bought under a guarantee of a stated value, for which an extra discount is allowed.

In some items of supplies our committee has not been in a position to recommend any line of action. I trust our discussion will bring light to bear upon these as well as other matters. Bandage cloth is one of these. I think we are all agreed that the foreign cloth is better, and a quality
sufficiently good to stand washing, is most economical. Petrolatum costs less than half the price of lard, and when it can be used, is cleaner and better. I find that by buying coal in July a saving of 50 per cent. is effected, but unless stored in a dark store house loses its heating value at the rate of about 2 per cent. per month. There is a standing offer in my hospital of $1.00 for every practical suggestion that will make for efficiency or economy, but I sometimes think that it might as well be $10,000.

Once only have I had an opportunity to give it, and that was in connection with the purchase of rice. The suggestion was that we have a standard measure made, and on investigation I found that we were getting short measure to the amount of over 20 per cent. What is the best method of buying rice? Some I find make a contract for the year's supply at a stated rate to be delivered as required, others buy a year's supply and have an approved system of storing it, some place the whole food supply in the hands of the cook at so much per head, while others buy all things as required. I am doubtful if any three of us would find any one plan most satisfactory. Time, environment, and opportunity are all factors to be taken into account. My own plan is to give the cook a stated amount per head for vegetables, fish, etc., as these items are more stable in price, and buy the rice as required, purchasing ahead on a rising market—sometimes finding it a falling one before the stock is finished.

Have we reached the limit of our saving possibilities in the purchase of general supplies, or can we hold all we have gained in the future, are pertinent questions. To the last I would say yes if we hold together and have a few more join us in order to have a margin of safety when the size of the order is a necessary factor. Should we return to the old way I do not think that our largest buyer will save as much by 10 per cent. and the smaller ones by 20 per cent.

To the first question I would say, No. A careful study of freight and packing charges may open out a further saving of 2 per cent. or 3 per cent., and sooner or later cheaper sources of supply may be found, but this last will require constant watching. It is useless to consider the question of a central supply depot unless some philanthropist will establish one and look for neither profit or interest on the capital. I am informed that steps are being taken for the establishment of such a supply depot as a missionary enterprise. I have been unable to get definite information about this, but should it be done our bills for supplies will be very materially reduced.

There are, however, two other ways in which I see a possible reduction of from 5 per cent. to 15 per cent. from our present prices. There
are now being formed through China and Korea more branches of the
C. M. M. A. such as ours, and if this matter was introduced to these
branches they could effect a saving of at least as much as we have, and
if all of them came in we could get a material reduction in prices for the
quantity we would then be able to buy.

Granted that with more hospitals buying together we could double
our present orders, I venture to say that if we were to give one of our
members, when on furlough, a year's orders in his hand with power to
make a three or five years' contract we could save at least an extra
15 per cent.

JOHN MACWILLIE, M.D., C.M.

In Consultation.

LETTERS FROM DR. WARD.

THE UNIVERSITY OF NEBRASKA,
LINCOLN, APRIL 24TH, 1908.

DEAR DOCTOR JEFFERYS:

I had to secure a copy of the original article on D. Rathouisi which
was not available to me. Then it seemed necessary to cut sections of
one specimen, even though the material was very precious. I cannot
say yet positively, but have come to this conclusion: The specimen
is either another form as yet undescribed or the original description
of Rathouisi is very much in error.

A paper of mine, now in press, of which you will receive shortly a
copy, will explain some of the points you suggest with reference to a
large breed of worms and a small. The truth of the matter is that in
nature we do not find such conditions, since what Weismann calls
Panmixia reduces all to an average condition and the extreme variations
in size have proved, everywhere, that careful study has been made both
among worms and vertebrates in wild condition, to indicate different
species. Your large breeding of horses, and small, depends upon
artificial selection and breed under the control of man. I expect that
the giant and dwarf ascarids indicate either youth and old age or
different species of worms, since some of the largest I have ever seen
were taken from children.

Let me say a word with reference to your paper "Kodaking for
Small Game" in the C. M. J. which has just arrived. The articles you
figure at the bottom of page 100 are undoubtedly spores of rust.
1. **Fasciolopsis buski**. Dr. F. W. Goddard, Shaoshing. 
   Photo by J. L. Maxwell, M.D., Tainan, Formosa. $\times 1\frac{1}{2}$.

2. **Distomum rathouisi**. Dr. F. W. Goddard. 
   Photo by W. H. Jefferys, M.D., Shanghai. $\times 1\frac{1}{2}$.

3. Same. $\times 2$. 
In Consultation.

Number two certainly belongs to the genus *Puccinia*, which is a common rust of wheat and other grains. It is cosmopolitan and grows on straw and chaff as well as on the grains, so that the possibility of contamination after the discharge of the feces is evident as well as the presence of the spores in normal food material and subsequent diagnosis from feces. These spores have such a thick covering that they are not effected by digestive processes unless it be that they have started to germinate as is often the case. I know of their discovery in feces very frequently. Numbers 1 and 4 together, possibly with 3, are spores of *Macrosorium*. The genus is ubiquitous and cosmopolitan and can be found anywhere in great abundance. It grows on any decaying organic matter. A dead leaf, or any other vegetable, affords a splendid medium for its growth. The possibilities of its reaching the alimentary canal are identical with those suggested for the other species. I have sketched out, though never yet published, a paper on pseudo-parasites that might be useful to men working under conditions where they have not had an extended course in micro-technique and the identification of all possible micro-objects as well as those who do not have available a large supply of material. What would you think of such a paper provided it were generously supplied with illustrations?

In the same number, page 107, I notice two identifications of *Fasciola hepatica* from the eggs. I fear that they are rather doubtful. In fact, I know of no positive identification showing that this species occurs in your part of the world. No doubt you have thought of the matter before and perhaps have some evidence, but in the absence of evidence I should interpret the identification as conforming to *Fasciolopsis Buski*. If you have Mense, Handbuch der Tropenkrankheiten, Bd. I and Tafel IX, figures 3 and 4 give ova of the two species splendidly represented. They are exceedingly similar as you will see, and I feel that probably a renewed examination will determine whether the previous diagnosis of Dr. Day is correct.

Very cordially yours,

Henry B. Ward.

Lincoln, Nebraska, April 27th, 1908.

My Dear Doctor Jefferys:

I have looked up the specimens and find them immensely interesting. First let me congratulate you upon the way in which the package was put up. It came through in perfect condition and was a model. The flukes do belong to the so-called old species, *Opisthorchis sinensis*. Perhaps you know that this has recently been investigated by Looss and rather strikingly revised. There are undoubtedly two species which were correctly differentiated originally by Baelz, in 1883, of whom Looss says:—
Baelz recognizes two distinct species of liver-flukes, a *Distoma hepatis endemicum* sive *perniciosum*, and a *Distoma hepatis innocuum*. They are distinguished from one another (see Leuckart, 1876, p. 338), first and foremost by their quite different size, *Dist. innocuum* attaining a length up to 20 mm., whereas *Dist. endemicum* does not exceed 8 to 11 mm. Of the other differential characters given by Baelz the following seem to me to be worth mentioning: *Dist. innocuum* has (1) a uterus of lighter color but larger volume, (2) slightly larger ova than *Dist. endemicum*, and (3) possesses in its excretory apparatus and body-parenchyma numerous black granules. The exact measurements of the ova are, according to Baelz, in *Dist. innocuum* 0.021 to 0.036 mm. length by 0.018 to 0.02 mm. breadth, in *Dist. endemicum* 0.02 to 0.03 mm. length by 0.015 to 0.017 mm. breadth. From the names given to the species it may be inferred that the small variety is very common in the country ("endemic") and harmful to its host ("pernicious"), presumably because of its occurrence in large numbers, whilst the larger is rarer, i.e., not present in large numbers and therefore comparatively harmless ("innocuous").

The specimens you sent are undoubtedly *Clonorchis sinensis*, of which Looss says (page 150):—

*Clonorchis sinensis* is chiefly a parasite of Chinese, but occurs rarely also in Japan; i.e., according to what we know at present. For it is not at all improbable that the worm will be oftener found as soon as attention is paid to its existence; it appears also not unlikely that it may be restricted to certain localities; up to now it does not seem to have been found in animals.

You will notice that it is very important to determine the distribution, frequency, and effects of the two species. A number of recent medical reports from the east are radically at variance with reference to the pathological significance of the old *Opisthorchis sinensis*. Very likely this may be due to the confusion between the two species, which may differ in pathological significance. If you have not the paper of Looss available, and would find it of interest, I should be glad to mail it to you for examination at any time.

I have been working myself quite a little on the so-called lung distomes heretofore grouped together under the name *Paragonimus Westermanii*. The species from the tiger originally described under this name I feel confident is different from the species found in man as well as from the species which occurs in this country and which I have named *Paragenimus Kellicotti*. I have a suspicion also that the species found in man in the Philippine Islands is not the same as that which occurs in Japan, Formosa, etc., for I cannot reconcile otherwise the radically discrepant findings of careful observers. To settle this question I am anxious to secure material in some quantity from different regions of the Orient.

Very sincerely yours,

Henry B. Ward.
Clonorchis sinensis. Distoma hepatis endemicum. From a dog's gall bladder, Shanghai.

Uncleared. X to.

[See B on reverse of leaf.]

Variation in Eggs of Clonorchis sinensis noted on P. 189 of May JOURNAL.

1. Ordinary, operculated type, finely granular.

2. Variation—Slender, no projection of operculum. Large granules.
CLONORCHIS SINENSIS. Distoma hepatis inocuum. From Chinese man's gall bladder, Shanghai.

DEAR DOCTOR JEFFERYS:

In reading that you recovered about 500 flukes from one case of \textit{Opisthorchis sinensis}, I am overcome with miserly greed.

With regard to the two flukes formerly sent, there is no possible question that they are not the same species. Whatever conclusion may be reached, please tack that upon the wall as absolute. I long for more material, for I hesitate to make a final decision on the basis of such scanty supply for comparison. The real alternatives are those advanced in my former letter, namely: that the long one is \textit{Fasciolopsis Buskii} and that the small one is either \textit{F. Rathouisi} or a new species. A dozen or twenty specimens would enable me to decide the case. With these two specimens I still keep hanging on the top of the fence and wondering which way I had better jump, for it is a little too dark to see the condition of the ground. This illustrates beautifully the difficulties of previous observers with reference to \textit{O. sinensis}. While the theory of extension and retraction may appear to you to be tenable it certainly cannot be held in view of what we have found in other cases.

With reference to the method of introduction one can only hazard a guess. All of the flukes have an intermediate stage in some snail. From this they may be introduced directly if the snail-eating habit is common in the region. More likely the animal deserts the snail and in a free swimming stage comes out in moist places to encyst on some plants which are eaten raw—lettuce, etc.—or to swim around in the drinking water and thus reach the human system, or finally to enter a fish for a temporary stay and with fish food to reach the human system.

I wonder if in your reference to "hiusect" you had in mind the note on page 101, C. M. J. If so, I have already written you my explanation of the structure in advance of your inquiry. Your suggestion in the letter that it may have been introduced by rectal treatment is very timely. Certain powders which are used for dusting wounds are very heavily contaminated with rust spores, and in fact one can hardly find any dust which does not contain them. Unless great pains were taken to sterilize all apparatus and material used in rectal treatment they might easily be introduced.

If this does not answer all your questions, come back at me again.

Very cordially yours,

HENRY B. WARD.
Reports of Customs Surgeons.

1-CH'ANG IMPERIAL MARITIME CUSTOMS MEDICAL REPORT. April, 1908.
By Geo. F. Stooke, L. R. C. P., I-Ch'ang.

"I-Ch'ang Fever."

Nomenclature.—Readers of the Annual Report of the Rankine Memorial Hospital, I-Ch'ang, for the year 1907, will doubtless have remarked upon the large proportion of in-patients entered as suffering from "I-Ch'ang fever." An apology is certainly needed for the name so impossible from a scientific standpoint. It is the general opinion that "Shanghai fever," "Ningpo fever," "Hankow fever," "Yangtze River fever," etc., are all one and the same disease, but is that really the case? Will all medical men, who every year meet cases of non-malarial fevers, compare their experiences with those detailed below, and then it will be known if in the different ports and inland cities of China we are really meeting the same infection, though classed under different names. Is our "China port fever" the same as the official "Simple continued fever" of India? In Calcutta that disease appears to be anything but "simple," and a recent number of the Journal of Tropical Medicine was bemoaning the fact of its very high mortality, and that practically nothing was known about it. "I-Ch'ang fever" has a mortality of under one per cent., so is rather more deserving of the epithet "simple". But though the mortality is so low yet the illness is very protracted, the patient is terribly weakened by it and convalescence is always slow, and should any of us venture to style their illness "simple" I am afraid our patients would be inclined to doubt the correctness of our diagnosis. "I-Ch'ang fever" usually commences as a "remittent fever", but that name should be sacred to the severer types of malaria.

Fifteen years ago while at school in Chefoo, I can recall several cases of fever which Dr. Douthwaite, a former president of the China Medical Missionary Association, announced as "diagonal remittent", and a glance at the charts accompanying this paper will suggest why such a terminology was employed. I cannot find such a name, however, in any books, and Dr. Douthwaite himself in his treatise on fevers in China does not use it, probably because the book was intended
for lay readers. In that same book, moreover, he confounds the "Treaty-port fever" with malarial remittent.

Native patients suffering from this fever usually come to hospital describing their ailment under the comprehensive term 寒病 hau-ping, i.e., cold disease. This term is of course only descriptive of the initial prodromata when shivering and even rigors are often experienced, or the expression may possibly signify that the illness was brought on by cold. The natives here rarely confound it with malaria, for they recognise the very regular periodicity of even quotidian infections.

With all this choice of names before us what then shall we call it? Will some genius give us a suitable, descriptive, and scientific name?

Aetiology.—In our present state of ignorance the cause of the fever can only be guessed at, but its analogy to malaria seems to suggest that it is an infection caused by the bite of some blood-sucking insect. Of the many cases I have met with here the largest number have come from one house—a mission school. This building is situated at one end of a large shallow lake and quite near a series of paddy fields. Our commonest breeze (from the south-east) blows every afternoon through the hot weather across this sheet of water and would easily carry even low flying insects into the house. Extra precautions have now been taken in the shape of mosquito proof doors and windows, and it will be of interest to observe whether the percentage of fever in this school is thereby diminished.

Examination of the blood in cases of "I-Ch'ang fever" is also highly suggestive of a protozoal infection, the proportion of the large mononuclear leucocytes being markedly increased as in malaria and trypanosomiasis.

Symptoms and Signs.—The illness is frequently initiated by a feeling of cold and shivering, but I have never seen so sharp a rigor as is common in malaria. Headache, backache, pains in the limbs are common as in any other acute infection. Some cases complain chiefly of nausea and actual vomiting, and this may persist, occurring every day when the fever is rising to its highest point. The fever is usually highest every afternoon and evening between 4 and 8 p.m. In a mild case the temperature will reach the normal line every morning, but in severer cases the fever is remittent in type. It is as a rule always lower in the morning than the evening. Some cases, without having taken any diaphoretic, will be troubled with excessive perspiration.
often localised about the shoulders and the nape of the neck. At other times the sweats are drenching, necessitating constant changes of clothing. If the temperature rises to over 105° F. there will likely be some delirium. There are practically no other symptoms. The case is that of a simple (meaning thereby uncomplicated) and continued fever.

The signs to be found are equally unsatisfactory. The spleen is enlarged, but not markedly as in malaria and typhoid. It is slightly larger than normal, but only such as one would expect to find from the amount of fever present. I have never found any glandular enlargement, nor any rash. Indeed the diagnosis is made by excluding all known and named diseases, and having a case of simple and continued fever it is then named "I-Ch'ang fever."

Course of the Fever. — The temperature charts of these cases present, however, a very definite appearance which once recognised will never again be mistaken. I will briefly describe six cases, and their course may be studied by reference to the charts accompanying this paper.

Case I. This is typical of our simplest cases and is typical of the fever when it attacks strong and healthy males. There is usually an afternoon-evening rise of 101°-102° F. The morning temperature being 2°-4° less. The greater the differences between the morning and evening temperature the better of course for the patient, as he has a longer period of defervescence during the twenty-four hours. Each day the highest evening temperature will fall a little lower (usually half a degree) and the morning temperature will keep parallel to it, giving a parallel and diagonal marking to the chart. This I have suggested by lines. So exact is this lysis, as a rule, that by joining the highest temperature marks and carrying the line along the chart one is able to give the patient very exact information when the fever will be at an end. Disturbances of the diagonal line will of course occur from any mental work or excitement, departure from a milk diet, constipation, etc., etc.
Case II. This patient, a foreigner, had treated himself for nine days before entering hospital. He had during that time taken in all half an ounce of quinine, but with no good result. After admission the temperature was not so typical as an average case; that of the 11th and 13th days being quite deformed, and this may have been due to the quinine he had taken. These aberrations, however, never ultimately affect the normal diagonal which this fever takes. A slight relapse was threatened on the 19th day, but it came to nothing. Such relapses always show the same parallel and diagonal lines, but in an ascending direction.

[See Charts on next pages.]

Case III was also a foreign patient treated in his own home until the 7th day and then coming into hospital. It is, however, quite common for the fever to keep on a high level, even with the best and most careful treatment for the first seven days of the infection. The parallel diagonals were well shown when once the fever began to get intermittent.

I may here state that in all these charts the observations were made by my native students, and many of the slight departures from the diagonal can be explained by their not exercising the proper care. They knew nothing of my parallel diagonal theory, so the charts are in no way "cooking".

Case IV. The patient in this case was a native. The chart was commenced on the 10th day of his illness, and from the history it was evident he had been suffering from a high remittent fever during that time, such probably as is seen in Case III. The prognosis in this case was good, as the difference between the morning and evening temperatures was 3°. In a blood film in this case was found what was considered a protozoal organism. It was present in very scanty numbers; only one being found in twenty slides examined. This slide has been sent to the London School of Tropical Medicine for corroboration.

Case V. The experience during the first week in this case is unfortunately very common, the parallel diagonals running in the wrong direction. On the 9th day the patient was told she would probably be free from the fever on the 19th. This prognosis was made on the strength of the direction of the
Reports of Customs Surgeons.

CASE V.—R., aged 36, a foreigner.

CASE VI.—N., aged 26, a Japanese.
diagonal line and proved correct. With a difference between the morning and evening temperatures of $4^{\circ}$ the prognosis of course was very hopeful.

Case VI. This patient, a Japanese, was the only case that terminated fatally in all the patients I have attended during the past eight years. Drenching perspirations were a rather unusual feature in this case. On the 11th day of the fever a decided change for the worse took place, when a new and higher parallel diagonal temperature occurred, which terminated on the 17th day in heart failure and in death on the 19th.

Blood Examination.—The red cells are normal in size, colour, and number. The white cells, while normal or reduced in number (I have never met a leucocytosis), are markedly altered as regards the normal proportion of their different constituents. The percentages of white cells in my cases work out as follows:

<table>
<thead>
<tr>
<th></th>
<th>Normal</th>
<th>&quot;I-Ch'ang fever.&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lymphocytes</td>
<td>10-25</td>
<td>12 per cent.</td>
</tr>
<tr>
<td>Large mononuclears</td>
<td>5-10</td>
<td>26</td>
</tr>
<tr>
<td>Polymorphonuclears</td>
<td>65-75</td>
<td>59</td>
</tr>
<tr>
<td>Eosinophiles and Basophiles</td>
<td>2-4</td>
<td>3</td>
</tr>
</tbody>
</table>

In Case IV as before mentioned a new element was found lying among the red cells. It was a sausage-shaped body in size 8m. by 3m., a little larger than a malarial crescent. Using Leishmann's modification of the Romanowsky stain two red chromatin dots could be seen lying in the centre of the body. The general matrix stained blue. No clear space was anywhere seen resembling a vesicular nucleus and there was an entire absence of all pigment. No vestige of any red cell was seen about it; it appeared to be present free in the blood plasma. Although many other films from the same case were examined no other similar body was ever found. If it is the cause of this fever it will therefore be a rare visitant of the peripheral blood and will probably multiply in the internal organs. One has witnessed so many such "discoveries" come to naught that no more need be said about this until some confirmation comes from home. It will be well though for all working at stained films of the blood of this fever to make most diligent and painstaking search in the hope of finding such occasional visitants.

Diagnosis.—From malaria fever it may be differentiated by the entire absence from the blood of the malarial parasite in any form. pigment bearing leucocytes are never met with, and this fever never responds as does malaria to the therapeutic test by quinine.

We frequently meet with cases of enteric fever in I-Ch'ang, and there is never any difficulty in separating the two fevers. The entire absence of rash, no abdominal disturbances, and a much smaller spleen
OPENING OF THE AMERICAN PRESBYTERIAN HOSPITAL, CHENCHOW, HUNAN.
easily separate the two fevers and moreover the blood picture of the two is quite different. Typhus would only be confounded with "I-Ch'ang fever" in the early days of the illness.

**Treatment.**—The patient is kept in bed and put on a milk diet. No drugs are really necessary, and quinine only distresses the patient unnecessarily. I usually, however, prescribe regular doses of phenacetin, 10 grains every four hours, combined with the citrate of caffeine to prevent cardiac depression. This is employed not as a curative agent but to minister to the patients' comfort. I have tried Warburg's tincture, methylene blue, cinnamon, and many other drugs, but all seem equally useless. With rest in bed, a light milk diet, and phenacetin, the patients are soon quite comfortable, the temperature begins to break, and gradually falls by lysis in the manner previously described.

Convalescence is sometimes very protracted; the too sudden assumption of any solid food, the mental excitement of writing a letter or receiving a home mail being often sufficient to cause a relapse.

When the fever has become normal for three days the patient is gradually weaned from the phenacetin and a good tonic is substituted. In persistent cases of relapse a holiday is necessary, preferably a sea trip.

The foregoing description of our "I-Ch'ang fever" is written in the earnest hope that other medical men who meet such fevers herein described, will compare them with the typical cases I have placed on the charts. This paper is only intended to be a basis for future study. Let us know first if the non-malarial fevers met with in different parts of China present a similar clinical picture, and then, with many minds working at it, advances in our knowledge of aetiology and treatment will assuredly be made.

7th April, 1908.

**OPENING OF THE AMERICAN PRESBYTERIAN HOSPITAL AT CHENCHOW, HUNAN.**

On February 19th the first hospital of foreign construction in the southern half of Hunan was opened at Chenchow with considerable display for a city so far in the interior. Letters of invitation had previously been sent to the Governor at Changsha, more than 700 li away, and to the Taotai at Hengchow, more than 300 li, simply wishing them to know of our work, and never hoping for anything more than
letters of congratulation. But these wide-awake officials, wishing to know of the real progress going on in the farthest parts of their province, each sent overland an official to represent them at our opening exercises. This was at a tremendous discomfort, and considerable expense, as the former was ten days and the latter five, coming through an almost constant rain to reach Chenchow in time. The local Chow official did very much in making the day a grand success. The military official sent guards and a corps of buglers to furnish classical music for the occasion. The gentry of the place, as well as the teachers and large shopmen, turned out en masse; the former presenting a most beautiful silk banner, some 20 by 5 feet in dimensions, and the latter presenting beautiful glass lanterns and other ornaments. The new hospital was gaily decorated with flags and pictures and really presented a beautiful appearance when the assembly room was filled with the officials and gentry in their gay robes. The exercises began about 12 noon, with a few words of welcome by Dr. Lewis, the builder and physician in charge. Our Chinese evangelist then read several appropriate selections from the Scriptures and led in prayer, after which the Governor's and Taotai's representatives and our local Chow official in turn made very complimentary addresses, seeming to truly appreciate and hope for the continued success of our hospital work in this place. Mr. Locke, of our staff, and Mr. Han, of our school, explained fully our object in coming here and providing this very large field with the blessings that a hospital may bring. Mr. Scholes brought greetings from the Wesleyan Mission and Mr. Mitchell pronounced the benediction. The songs sung, which seemed to please the audience highly, should not be forgotten. They were, "All people that on earth do dwell", "The Great Physician", and "God Save the Emperor".

A foreign banquet was served immediately after the exercises to the officials, gentry, and foreigners, numbering twenty-five in all, which all seemed to enjoy. After a minute inspection of the entire hospital premises by all these guests, and an assurance by the visiting officials that they would make a good report of the hospital to the Governor and Taotai, they departed, after one of the happiest days for us all since coming to China. The three following days guests from among the large shopmen, teachers, and workers were invited to Chinese feasts.

The hospital, which is 85 by 55 feet, while not large, has had a grand opening; a good advertisement, and we all hope it may be a mighty instrument in the saving of men's souls as well as their bodies.—From Stephen C. Lewis's letter.
THE NEXT MEETING OF THE CHINA MEDICAL MISSIONARY ASSOCIATION.

It is probably quite time that active steps should be taken toward the organization of the next meeting of the Association. The Central China Medical Missionary Association courteously requested that the meeting might be held at Hankow. This fixes the place. The time will be either April or May, 1910. The exact date will be notified through the JOURNAL later. The Central China Medical Missionary Association will be the Committee on Arrangements and Entertainment, with power to appoint a Local Executive Committee. This committee will provide a place in which to hold the meetings and will arrange with hotels and private houses for boarding accommodations for those in attendance. It, in co-operation with the President, the Secretary, and the Editors, will have charge of invitations to fraternal and other delegates and guests.

The Committee on Programme, the members of which will either prepare, or secure the preparation of papers to be read before the Association, shall be as follows:

Dr. Jefferys, Chairman, and for the Shanghai Branch.
Dr. Booth, for the Central China Branch.
Dr. Avison, for the Korean Branch.
Dr. Phillips, for the Manchurian Branch.
Dr. Hume, for the Kuling Branch.
Dr. Peill.
Dr. H. Stanley Jenkins.

Dr. Freeman.
Dr. Stooke.
Dr. Venable.
Dr. Cole (of Ningpo).
Dr. Mackenzie.
Dr. J. Preston Maxwell.
Dr. Kuhne.

This Committee may appoint a sub-committee from among its number to arrange the programme, provide for its publication, and do such other work as may be desirable to be done in connection with this matter.

The Committee on Revision of the Constitution shall consist of Drs. Beebe, Cousland, Venable, Park, and Stuart. Inasmuch as this committee should take ample time to prepare its report before the time of the Association meeting, it was thought advisable to have its members within easy reach of each other. Hence the local character of the committee. The relation of the Branches to the General Association is thought by some to need revising; the question of the reception of Chinese graduates as members of the Association has come up for consideration, and other alterations are proposed. The committee will be glad of suggestions and criticisms from any member of the Association, if early sent to Dr. Cousland or the Editors of the JOURNAL.

By the President.
It is a long cry to the Spring of 1910, but the president has been wise in appointing his committees early, as will be seen in this issue, and with two years for organization and preparation, we have no excuse for not producing the "best thing ever yet". The conference will be in Hankow and that in itself should be reason enough for a general effort to attend. It is the central spot of China for a general gathering. And the arrangements will be in the hands of our most energetic and successful branch.

The first and foremost matter is the programme. It cannot be gotten at too soon and it will be gotten at once. The chairman of the programme committee has a few ideas which he believes will tend to produce a quality of fruit which for flavour and nourishing power will approve themselves even to the maturing appetite and intellectual gastronomies of the Association.

Perhaps the chief feature of the programme will be a final and complete report by the chairman of the first research committee on its three years' fecal investigation, the preliminary section of which appears in this issue.

There will be submitted also, at least to be read by title, a study on the nosogeography of China which may be a basis of the appointment of a subsection of the research committee to work it out.

There must be some positive discussion of the patent medicine question, which is becoming unendurable.

And there must be a couple of strong papers on medical education. The day of the small fry is passing and we are to do something larger or give it up.
Editorial.

The plan of the chairman will be to subdivide the large committee into sections of three and to make each section absolutely responsible for the preliminary production and arrangement for definite parts of the programme. For instance, one section will have the educational interests in hand, another a general exhibit, microscopic and macroscopic of fecal specimens and intestinal parasites, to represent the findings of the association from all sections of the country.

Suggestions are cordially desired, and all such will receive prompt and careful consideration. New and original features, especially in the way of demonstration, will be most welcome. It will be urged that business matters be put in as well digested a form as possible, especially the report of the Constitution committee, in order that it may be possible to have the larger part of the time for more interesting matters.

* * *

Opium is subtly bad, but the trade in Patent Medicines reeks with filth and stinks to heaven with its gross and abominable selfishness. Immoral, like the rape of innocent and defenceless women, it preys upon the helpless, the ignorant, the little ones, and pollutes them. Greedy, unscrupulous, pitiless, plausible, it gathers in its arms the great company of the feeble ones and slowly robs and poisons them. The press grows fat on it, church papers make two ends meet thereon—the end of finance and the tail end of morals. Even the little-minded doctor is flattered by the attentions of the drummer and prescribes he knows not what for the disease he knows not where. This grinning horror is feeling its way to the pockets and stomachs of the millions of China.

China has no pure food law, and at the same time the Chinese are the greatest race of medicine eaters on the face of the whole earth. China is at present the very "easiest thing" that the patent medicine trade has ever struck, and that is saying a great deal. China is already gorging patent medicines. And not only is the best and the worst of the original foreign tribe of patent horrors upon the market, but something even worse than that—the abundant Japanese imitation and attempt at the original horror. Now when a foreign fake is guaranteed to cure positively an absolutely incurable disease, and this fake is imitated and forged by a Japanese fraud, the resultant good to China we leave to your fertile imaginations.
We are convinced that more harm, if this thing goes on unchecked, will be done to China through patent medicines than opium has ever approached the doing. Please make no allowances for us in this matter. We are not speaking without thought. We said this thing a year ago in print and again at the Medical Conference last spring, and there are many who know that this is true.

Meanwhile please remember *it is a sign of weak mentality to take or to prescribe patent medicines, of which neither the taker, nor anyone but the maker, knows the contents.* We recommend this formula to all takers of patent medicines: Pour out a dose, hold it up before a full length mirror and say these words, "I do not know my disease, neither does the maker of this dose. I do not know what is in this dose, except that it certainly is not merely what it says it is; moreover, it probably contains a dangerous drug, or more than one. I preach against alcohol and opium. This dose probably has both. It may be only a cocaine or an acetanilid mixture. I do not know how much it has of anything. Many lovely lives have become drunken or drug-bound by doing what I am going to do. I am mentally deficient and I am intemperate to the extent of being a fool." Then the dose should be taken, and the routine of preaching against tobacco and alcohol should be proceeded with under the stimulus of alcohol and morphine.

Your example and your prayerful consideration of the Chinese people are asked for along the suggested lines. When the time for action comes, we shall count on this Association.

* * *

A paper read before the C. C. M. A. appears in our columns, which will be of interest to the many medical missionaries scattered throughout China. We refer to the paper on "Hospital Economics" delivered as the Presidential Address by Dr. John MacWillie, the new president of the Central China Branch of our Medical Missionary Association. It is practically a review of what has been done by that Society during the last few years to diminish the annual expenditure on drugs, and clearly proves that combination is productive of great benefit to the hospitals in Central China. We have in the past held up the example of this branch of the C. M. M. A. as worthy of imitation by the other branches scattered throughout China, and
now once again we desire to do the same. By purchasing along
the lines laid down in the paper above referred to it will be possible
for all hospitals to save a percentage, large or small, according to
the size of order, every year. We need not point out that a saving
which does not involve the question of efficiency is always worth
trying for. What we do object to, and what we would be the last to
give our support to, is a saving that is made at the cost of efficient
working. In the C. C. M. A. the saving made has not in the least
interfered with the efficiency and quality of the work done. A scheme
to unite all the hospitals in China is possible of being worked, but
not from Hankow as centre. It may be possible in the near future
to have a purchasing committee in Shanghai from where it would
be easier to manage the distribution. At present, however, it might
be sufficient for each large branch of our Association to manage for
its own district, and then at our next triennial meeting it may be
possible to devise some scheme by which the whole system may be
unified.

* * *

The Central China branch of the C.M.M.A. have already elected
a committee to make arrangements for this meeting. It is desired
to make the next conference a notable one in
triennial meeting of the C. M. M. A.
every way. We shall be glad to have sugges-
tions from any and all sent in, and you may be
sure that all will be attended to. It is true that the conference is
still two years off, and it may be that some of us now so interested
may not be here then, but still though we may be gone it does not
follow that there will be no conference. In fact some might say
that the conference might be better if some of us were gone. Still
we don't anticipate any such remarks, and we are all determined to
to do our little best to make it a success, and if we all enter into
the arrangements in that spirit the conference will undoubtedly be
a success. Keep the matter before your minds, and should any
happy thoughts or brilliant ideas strike you, make a note of them
and forward them to us in due course.

* * *

Circumstances have recently shown the desirability of the
The Referendum. Association strengthening the hands of its mem-
Boards on three points. These are:—
1. The necessity of a thorough practical course in tropical medicine before coming out.

2. The necessity of thoroughly screening mission houses in malarial districts. (See Dr. Maxwell's paper.)

3. The necessity of Boards allowing time and paying the fees for a good course of postgraduate studies while on furlough.

The Executive wishes a referendum on these points. Voting papers are enclosed with this number. It is of the utmost importance that every one should express an opinion so that the Association can send a weighty representation to the Foreign Mission Societies and Boards.

ASSOCIATION NOTES.

BRANCHES OF THE C. M. M. A.

Central China Branch.—Dr. J. G. Cormack, Hankow, Secretary.
Kuling Branch.—Dr. W. A. Tatchell, Hankow, Secretary.
Manchurian Branch.—Dr. W. Phillips, Newchwang, Secretary.
Korean Branch.—Dr. H. H. Weir, Chemulpo, Korea, Secretary.
Shanghai Branch.—Dr. A. W. Tucker, St. Luke's Hospital, Secretary.

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

Joined through the China Medical Journal.

Russell E. Adkins, M.D., Univ. of Penn., A.B. M.T., Swatow.
Jessie H. Baldwin, M.D., Univ. of Kansas, Meth. Episcopal, Talanfu, Shantung.
Emma E. Martin, M.D., North-western U., Meth. Episcopal, Tientsin, Chihli.
Marcus Mackenzie, B.A., M.B., C.M., C. M. S., Foochow.
H. R. Pakenham, M.B., B.Ch., Dublin U., C. M. S., Kienningsfu.
Hans Ribe, M.D., Basle Univ., Private practice, Canton.
Jesse Jane Stokes, L.R.C.P. and S., Edin., Ch. of Sect., Ichang.

Joined through the Shanghai branch:—
Dr. F. C. Fullerton, Am. P. E. Mission, Shanghai.

PUBLICATION COMMITTEE.

SUBSCRIPTIONS.

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Total: $57.55

Brought forward: $1,183.15

Gold: $57.55

Per Dr. J. A. Lichty: $10.00

Foreign Mission Board: $100.00

Gold: $150.00

Gold: $57.55

Total: $1,183.15
JOSEPHINE MAY BIXBY, M.D.

An Appreciation—By Mrs. A. M. Bacon.

That life is long which brings something to pass, which accomplishes noble ends, which builds for the future, which lives for others and for eternity.

Between May 5th, 1860, and June 16th, 1907, a life began, developed and ripened, which was destined to take a conspicuous place in missionary history. Josephine May Bixby laid good foundations. The public schools and Iowa University, together with courses in the Illinois Training School for Nurses, the Woman's Medical College of North Western University, and the Illinois Charitable Eye and Ear Infirmary, fitted her for effective work. Above all she was a child of God, a student of His Word; she took this training that she might the better serve Him in far off lands.

Thus equipped, she was sent to Swatow, China, in the autumn of 1894. Kiehyang was then an out-station of Swatow, and the medical work was in the hands of Dr. Scott, with whom she visited this out-post. Together they treated many patients a week; Dr. Bixby devoting herself to the eye cases, which are so numerous in China.

Her spirit of enterprise and independence led to her assuming the work at Kiehyang a little over a year after reaching the field. On this removal she says: "I have asked God to let me take up active work for these people just as quickly as possible, and He has already placed the plow in my hand and my feet in the furrow." She opened the hospital for regular dispensary work and introduced religious services both morning and evening with the patients. Five years later she tells of her purpose that no one should leave the hospital without some knowledge of the true God. Many of the patients became believers and have since told the good news in their own villages. Thus the medical work opens doors for the true doctrine and proves our Gospel to be one of mercy.

The hospital accommodations were soon outgrown, making imperative for the general work the use of the chapel, which had previously served as a home. This change involved great inconveniences for Dr. Bixby; accordingly she set herself valiantly to overcome these difficulties by years of patient and persistent appeals, first for hospital
enlargement, then for a new woman's hospital. Her work at Kiehyang was somewhat interrupted by ill health and by caring for the Swatow medical work while Dr. Scott was on furlough.

She writes: "Opium smokers continue to come with their sallow faces and dejected looks, and after two weeks return to their homes, thankful to be rid of such a bondage. This treatment has been the means of saving some, body and soul."

In 1899, Dr. Bixby commenced training a class of women in medicine at Kiehyang; she was at this time cheered by the promise of a new house for herself and her associate. The work continued to grow, and the next earnest plea was for a man to lift the burdens and care for the department for men patients. The desired missionary home was finished in 1900, although the work had been hindered by the Boxer uprising and Dr. Bixby's furlough.

She spent much time and strength while in the home-land soliciting funds for a new hospital. Baffled by no discouragements at home in America, or at home in China, she presented the claims of that rapidly developing work until she won. The money came, the plans were approved, and the dream, nay, the purpose of her life was realized. During the time of construction Dr. Bixby was the only missionary at the station. She gave oversight to Mr. Speicher's work as well as to the army of builders until the long-wished-for "True Doctrine Hospital" was completed and dedicated.

Was her joy-cup too full? Or had this strenuous life sapped her vitality? In November, 1905, she had an attack of pleurisy. Though counting herself fully recovered, her strength did not return. She lost ground in the early months of 1907, and when spring came, was ordered home. She yielded with the strong conviction that this was the road to health and to the resumption of her chosen work. Six weeks of hospital treatment in Denver failed to bring back the boon she sought. She suffered uncomplainingly, hoping and expecting to return to China. There came a day, however, when the doctors told her there was no hope of recovery. Then this woman of energy, of purpose, of courage, her life work before her, calmly said: "The Lord's will be done." She fell asleep at the dawning of the Sabbath, June 16th, 1907.

The Kiehyang hospital is a fitting monument, a memorial building for which she gave her life. Born in Iowa, educated for her profession in Illinois, and supported by Minnesota,—these three states lay special claim to this self-sacrificing missionary. But it is Chinese women and children who are the mourners to-day.
A correspondent writes:—

"The motto of her mission life seemed to be, 'This one thing I do.' And how efficiently she did it, how lovingly, how winningly. We were present at the opening of her beautiful new hospital, so lovingly, so wisely planned, and remember how happy she was in showing us the result of her work and how joyfully she was looking forward to seeing it filled with suffering Chinese women whom she longed to help. She introduced us to her young women, whom she had selected to be trained as helpers and was full of enthusiasm as to her plans for the future. At last she had a building into which no man patient or helper would be admitted. But God's thoughts are not as ours. He had already marked His servant for higher service. Little did we think that the crowning day of her hopes and aspirations was the closing day of her work. Her last illness had already begun."

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**Book Review.**

**Folia Therapeutica.**

I have before me the fourth issue of *Folia Therapeutica*, and find myself fascinated by it. Published by a firm which already commands our gratitude for its bi-weekly contribution in the shape of the *Journal of Tropical Medicine and Hygiene*, one feels completely assured of its value when he sees among the names of contributors those of Clifford Allbutt, Bier, Lauder Brunton, Ewald, Thomas Fraser, van Noorden, Byrom Branwell and many others. As the publishers have well said, "the number of new remedies being brought before the medical profession has become so great" that the busy practitioner, especially the short-handed medical missionary, finds it an utter impossibility to keep pace with the advance of therapeutics. Nor have we the opportunity for accurately testing new methods of treatment or new preparations. It is, therefore, with great satisfaction that we hail this new journal, which is "to devote itself to publications on the progress of modern therapeutics and pharmacology and to present the methods of treatment and preparations which can be safely recommended for use, and which constitute a real advance in therapeutics. The issue for October, 1907, contains twelve original articles, all of which are refreshing and of intensely practical value. Three articles on the treatment of tuberculosis, written from different view-points and commending lines of treatment which are all within our reach, make this number of special interest to us in China. Two others on the uses of hydrogen peroxide will appeal to the more surgically inclined and to the otologist. Ewart discusses pneumonia in a way that shows the tendency of modern medicine to first inquire into the deep significance of the relations between the etiological factor concerned and the patient. He discusses the treatment of pneumonia in private practice, and in this issue considers first the pneumococcus and the patient.

And not without great use to us all are the last pages of each issue, in which are found (a) Abstracts from articles on therapeutics, (b) Reviews of books on therapeutics, (c) Current literature on therapeutics, which is an alphabetical list of diseases and remedies, giving the most recent literature on each from European and American journals.

The subscription price is but 4 shillings a year, postage free, and the journal may be ordered directly from John Bale, Sons and Danielsson, Ltd., 83-91 Great Titchfield Street, Oxford Street, W., London.

E. H. H.
Therapeutics.—The "Practical Therapeutic Referendum" by Dr. H. R. M. Landis, of Philadelphia, which forms the concluding article in the December issue of Progressive Medicine, is one of the sanest reviews of the therapeutic contributions of 1907 that has been put into print. Getting samples of all sorts of new synthetic drugs and reading articles and seeing advertisements of many others, we are apt to be confused as to what is good and what may be set aside as without value. Let me commend this article to all who want to know of real progress. I will cull a few of the helpful suggestions.

Bicarbonate of Sodium has been used for years for the relief of gastric pain and hyperacidity of the stomach. According to Meunier (Lancet, January 19th, 1907) the following theory underlies its use. The gastric pain is due to an excess of hydrochloric acid, which causes no inconvenience during digestion, owing to its absorption by the food. When the stomach is empty, the acid begins to exercise an irritating action upon the sensitive nerves of the mucosa. The administration of sodium bicarbonate at an interval of two, three or four hours after the meal results in the relief of the pain. Meunier, in testing the validity of this theory, found that pain was almost always most severe when the secretion of hydrochloric acid was at a minimum. Insomuch, however, as pain was nearly always relieved by sodium bicarbonate, he was led to ascribe its good effect, not to any neutralizing action but to the production of carbon dioxide, which exerts a calmative effect in gastric pain. If this hypothesis is correct, Meunier believes the administration of sodium bicarbonate alone is a poor method of producing the carbon dioxide, inasmuch as its therapeutic action is proportional to the quantity of hydrochloric acid present and is liable therefore to great variations. Additional objections are that the neutralization of the hydrochloric acid retards digestion as pepsin acts only in an acid medium; furthermore, the investigations of Pawlow have shown that the acidity of the gastric juice is a specific excitant of the pancreatic gland. Meunier therefore suggests that the carbon dioxide be produced by means of tartaric acid and a mixture of carbonates given so as to slowly and continuously evolve the gas without modifying the acidity of the gastric juice. For this purpose he advises that the tartaric acid be prescribed in 1 gramme (15 grain) powders and the carbonate powders be made up of sodium bicarbonate 0.4 grammes (6 grains), calcium carbonate 0.3 grammes (4½ grains), and hydrated magnesium carbonate 0.2 grammes (3 grains). The patient is directed to add an acid and an alkaline powder separately, each to half a glass of water, and, when the pain begins, to take alternately tablespoonful doses of the acid and alkaline mixture. Clinically he has found that this plan is much more efficacious in relieving pain than is sodium bicarbonate alone.

Diet.—As with drugs, so with medicinal foods, the statements of
the manufacturer have been blindly accepted because of a lack of knowledge of dietetics. The Council of Pharmacy and Chemistry of the American Medical Association has been doing praiseworthy work (Jour. A. M. A., May 11, 1907) in investigating the food value of a number of pre-digested foods. These should receive great publicity, so important are the conclusions reached. "In order to get a fair conception of the actual food value of these various preparations, it is desirable to make some comparison which can be readily comprehended by every physician. The amount of good milk necessary each 24 hours to sustain the vitality of a patient during a serious illness is not less than 64 ounces or approximately 2,000 c.c. The food value in calories represented by this amount of good milk may be placed at 1,430. This includes not only the proteid and carbohydrate matter, but the fat as well. By comparing this available potential energy with the total energy available in the pre-digested foods under consideration, it can be readily seen that if a physician depends on the representations made by some of the manufacturers, and feeds his patients accordingly, he is resorting to a starvation diet. The largest number of available calories, including alcohol, present in any of the recommended daily doses, is less than one-fifth of the number of calories represented by 2,000 c.c. of milk, and the calories represented by the daily dose of the preparation poorest in food products is only one-twenty-fifth of the amount present in 2,000 c.c. of milk. These figures tell their own story. Making 2,000 c.c. of milk the basis of calculation, and estimating the amount of the various preparations required to yield this number of calories, it is found that the quantity to be administered daily to supply 1,430 calories, including alcohol, varies from 716.2 to 1,506.2 c.c. In other words, it will be necessary, in order to supply 1,430 units of energy per diem, to administer the amount of the various products in quantities found within the above limits. In many cases the amount of alcohol exhibited by these quantities would keep the patient in an alcoholic stupor continually. The cost necessary to supply this energy varies from $1.48 to $3.39 (gold). Compare these prices with the cost of two quarts of milk. In commenting on these results of the Council of Pharmacy, Edsall states that the common use of medicinal foods largely depends on three factors. (1). Their nutritive value is thought to be very great. He often calculated the actual caloric value of the day's ration of patients who, at the advice of their physicians, were using these foods as a considerable part of their diet. It was found, as a rule, that such patients were taking, at most, one-third of what they actually required to maintain nutrition. Such patients suffer from more or less severe starvation, and not a few of them have died of starvation. (2). The names of a number of these preparations can be easily remembered, while it takes more trouble to acquire a knowledge of a variety of simple and cheap preparations that can be readily prepared in the home. (3). It is often thought that these medicinal foods are borne by a disordered digestive tract, when other foods are not. Edsall thinks this an erroneous view, and that only a moderate degree of skill and resource in using simple home-made preparations renders the temptation to use "prepared foods" very slight. He admits that there are a few very capricious patients for whom it is essential to provide variety in addition to the necessity
of providing an adequate amount of nourishment, but these cases are rare. In regard to the alcohol content he says: "Would it not be utterly irrational to be obliged to give a small dose of strychnine, for instance, with each small portion of food; and to be obliged also every time that one increased the food, to increase coincidentally from one to four times the amount of strychnine one was giving?" Aside from the possible intoxicating effects of the alcohol, even small doses irritate the stomach.

(Now that milk, at least in condensed form, is becoming available in all parts of China, it is satisfactory to know that we need not feel ourselves deprived of what is life-saving or important because we have not at hand all the latest fads in prepared foods.—Ed.)

Magnesium Sulphate. — Three new uses of this drug that we order by the cwt. from Hewlett are discussed in the literature of 1907. 1. For general anesthesia. The basis of this observation lay in the experimental work of Meltzer, who, reasoning from the fact that as sodium and calcium salts had distinct stimulating properties for some of the functions of the animal organism, magnesium salts, on the contrary, which are found plentifully in the tissues, might possibly have an inhibitory action on these same functions, undertook a series of experiments. With Auer, Meltzer found that subcutaneous injections of magnesium sulphate did produce real and lasting anesthesia. He eventually recommended intraspinal injections of the salt in man for the purposes of general anesthesia. To December, 1907, 14 cases were recorded in which this method was adopted. There is apt to be elevation of temperature, retention of urine, and undue slowing of respiration. The method, therefore, is only mentioned to show that it is not yet ready for general adoption.

2. For the treatment of tetanus. Here also the work has followed the suggestion of Meltzer. Robinson reports six cases (Journal A. M. A., August 10th, 1907). The procedure is as follows: Lumbar puncture is performed and the spinal fluid allowed to escape. 1 c.c. of a 25 per cent. solution of magnesium sulphate for about each 20 pounds of body weight is then quickly injected. In Robinson's case three such injections were made and were followed in each instance by the greatest relief. Within a few minutes the rigidity of the affected muscles lessened and soon became entirely relaxed. After about twelve hours there was a return of the symptoms. The second injection followed 18 hours after the first, and its good effects lasted about three days, when, with a return of the symptoms, the third and last injection was given. Absolute quiet and sedatives (bromide and chloral) are used in conjunction with the intraspinal injections. Recovery followed in three of the six cases. In one of the three that recovered, antitoxin had been used without success. Tetanus antitoxin is usually unavailing in cases of acute tetanus, after the union has occurred between the toxin and higher nerve centres. The failure of other methods in dealing with acute tetanus should therefore lead in the future to a very thorough trial of the injection method with magnesium salts. And in all reports the incubation period of the attack of tetanus should be given.

3. For the relief of pain in acute inflammatory conditions. Meltzer, again, must be given the credit for the scientific re-discoverer of magnesium sulphate. Tucker ( Therap. Gazette,
April, 1907) reports as follows: The application consists of a saturated solution of magnesium sulphate in water. It is applied on from 15 to 20 thicknesses of ordinary gauze. This is saturated with the solution at least every half hour, or as often as is necessary to prevent drying, depending on the time of the year and the temperature of the room. The gauze is not removed for 24 hours. The parts are then washed with water and the dressing re-applied if necessary. There is then found to be a marked blanching of the surface, which is not followed, however, by any deleterious effects. The remarkable anesthetic effects of the solution was shown from the fact that the attendants who made the applications experienced a partial loss of sensation accompanied by tingling of the arms and hands. This persisted for from 12 to 24 hours.

The conditions in which Tucker used the magnesium sulphate were gonorrheal epididymitis, other painful affections of the testicle, various painful joint conditions (acute rheumatism, gonorrheal arthritis), erysipelas, neuritis, sprained ankles, and simple contusions. The applications always relieved the pain in a few hours. Swelling of the testicle and redness and swelling of a joint usually subsided in from 24 to 36 hours.

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Pathological Notes

Conducted by JAMES L. MAXWELL, M.D.

The age incidence of 109 cases of opisthorchis sinensis infection in Cantonese: its small pathological importance. By Dr. C. N. Haenly, Acting Bacteriologist, Hongkong. Journal of Tropical Medicine, 1st February, 1908.

In the Journal of Tropical Medicine for 1st October, 1907, there is an article entitled "Liver Abscess due to Opisthorchis Sinensis, Fus in Pericardium." The writer brings forward no evidence to show that the abscess was caused by the parasite O. Sinensis, except that he found these flukes present in the liver, and that the stomach and intestines were normal.

The literature of tropical medicine abounds with instances of common parasites being mistaken for causes of disease until further investigation has shown the parasite to be as common in the healthy population as in the sick. The patient in the case related was a Cantonese aged 31, and twenty-four flukes were counted. It will be shown below that this is about the average number of flukes to be found in the livers of Cantonese in the age period 30 to 35.

About eighteen months ago I started to investigate the age, sex and class incidence of the disease in Cantonese. Three hundred livers, taken without selection, were carefully examined and two points of interest came out, namely, the exceeding prevalence of the infection and

Table showing Age Incidence of O. Sinensis in 300 Livers Taken Without Selection.

<table>
<thead>
<tr>
<th>Age</th>
<th>With flukes</th>
<th>Without flukes</th>
<th>Total examined</th>
<th>Percentage with flukes</th>
<th>Average number of flukes found in livers infected</th>
<th>Extremes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1 year</td>
<td>33</td>
<td>1</td>
<td>34</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2-5 years</td>
<td>40</td>
<td>1</td>
<td>41</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6-10</td>
<td>19</td>
<td>1</td>
<td>20</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>11-15</td>
<td>10</td>
<td>2</td>
<td>12</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>16-20</td>
<td>15</td>
<td>6</td>
<td>21</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>21-25</td>
<td>18</td>
<td>9</td>
<td>27</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>26-30</td>
<td>20</td>
<td>12</td>
<td>32</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>31-35</td>
<td>24</td>
<td>9</td>
<td>33</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>36-40</td>
<td>17</td>
<td>13</td>
<td>30</td>
<td></td>
<td>1</td>
<td>1</td>
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<tr>
<td>41-45</td>
<td>13</td>
<td>15</td>
<td>28</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>46-50</td>
<td>20</td>
<td>14</td>
<td>34</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>51-55</td>
<td>17</td>
<td>14</td>
<td>31</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>56-60</td>
<td>12</td>
<td>11</td>
<td>23</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>61-65</td>
<td>8</td>
<td>7</td>
<td>15</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>66-70</td>
<td>12</td>
<td>11</td>
<td>23</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The teeth Mr. J. Hutchinson described as so characteristic of the disease are the notched and narrowed incisors, especially the central incisors of the upper jaw. This defect is brought about by arrest in development of the central columella, of which each incisor has three. But I wish to draw special attention to the characteristic change brought about by the disease in the first molars, described by the late Mr. Henry Moon many years ago, since this change has been recently rediscovered both in America and on the continent. He figures and describes the syphilitic first molar as "reduced in size and dome-shaped through the dwarfing of the central tubercle of each cusp."

The change in the molar is of some clinical importance since occasionally it is characteristic when the incisors are normal.

Surgical Notes.

Under the charge of A. W. Tucker, M.D.

Carl Beck (American Medical Association Journal, April 18, 1908) urges the use of the Roentgen ray in the treatment of all bone injuries. No bone injury should be treated without at least one Roentgen picture. If there is no displacement, manipulation must be avoided, and the part should be put up in a plaster-of-Pairs bandage. If there is displacement, replacement must be attempted at once, either on a translucent table under the control of the screen, or from the guidance of two skiagraphs taken in different positions. When reduction has been accomplished, plaster-of-Paris bandage should be applied, and then a Roentgen ray picture should be taken to ascertain if reduction is perfect or not. If not, a new attempt at reduction should be made. While in the great majority of cases it is possible to reduce the worst fractures at an early stage, there are cases where, on account of the fragments being entangled from extensive splintering or other causes, it cannot be accomplished. Then the fragments must be exposed and trimmed until they can be brought into position. If necessary, mining should be done. The safest suture is aluminium bronze wire. Silver wire breaks too easily, hence the necessary force to hold the fragments together cannot be applied to it. All wire sutures should be removed in from four to six weeks, as they always causes more or less irritation.

Cunningham (Amer. Med. Ass. Journal, April 18, 1908) describes an apparatus for giving heated nitrous oxide, oxygen and ether sequence in general anesthesia. By mixing the nitrous oxide with pure oxygen, the nitrous oxide anesthesia can be continued until the other narcosis is established, thereby doing away with the objectionable features of the induction period of ether anes-
thecia which tends to lessen the after-effects. By heating the vapours, the refrigeration of anesthesia is greatly reduced, thereby saving the body heat and lessening the shock. There is no rebreathing, which eliminates the ill-effects of decreased oxygenation, of increased amount of carbon dioxide and of other gases. It also saves about half of the ether.

A simple apparatus for giving either ether or chloroform in the form of heated vapour in the Gwathmey mask, which is similar to the ordinary chloroform mask, except that the bottom of the frame is made of tube having small holes on the inside. By means of a rubber tube the mask is connected to a bottle containing the ether or chloroform. The bottle is then connected to an ordinary cautery bulb. The container is placed in a hot water bath, the temperature of which is just under the boiling point of ether or chloroform.

Gynaecological Progress.

In the Clinical Journal, February 19th, 1908, there is an instructive and interesting article by Bland Sutton on the “Treatment of Injuries of the Uterus.” They fall easily into four groups:

1. **Gynaecological injuries.**—This group includes perforations by the uterine sound, dilators, curette, or the nozzle of a syringe, or a douche. In this group must be placed accidental introduction of some strong antiseptic solution into the peritoneal cavity.

2. **Obstetric injuries.**—This group comprises such accidents as rupture of the uterus, arising from the use of midwifery instruments, or the operation known as “turning.” It will also include the so-called spontaneous rupture of the uterus due to violent contractions of the uterus in obstructed labour.

3. **Injuries to the pregnant uterus.**—Due to falls, kicks from man or other animals, horn rips of the uterus, bullet wounds, etc.

4. **Injuries to the gravid uterus in the course of abdominal operations.**

The simplest and certainly the commonest accident is perforation of the uterus with a sound, dilator, or curette. When the instruments are carefully sterilised and the uterine cavity free from pathogenic micro-organisms the passage of a sound through its wall is rarely attended with any untoward consequences. When the sound or the uterus, however, is septic, perforation of the organ has been followed by rapidly fatal peritonitis. A wound made with a dirty uterine sound may be as lethal as a snake bite. Injuries by dilators come more frequently under notice because they are more obvious at the time they are inflicted. When the dilator is small and clean, and there is no bleeding, the case may be left to itself. However occasionally very serious consequences follow simple perforations by dilators and curettes and this has induced Jarman (Gynaecological Tras., Philadelphia, 1905, vol. 30, p. 21) to urge that if in the course of dilatation or curettage a rupture or perforation of the uterine wall occur it is better to perform coeliotomy and assure oneself of the safety of the patient than to hope that no untoward result will ensue.

A careful study of the effects of forced dilatation of the unimpregnated uterus shows that if the dilatation is carried beyond No. 8. (Hegar’s scale) some tearing of the lateral walls occurs, and often this tearing will extend to and involve the serous membrane. Antiseptic douche afterwards will lead to serious trouble. This can be avoided if the practitioner will be content to mop out the uterine
cavity instead of uselessly deluging the endometrium with antiseptic lotion.

Cases have occurred in which nurses douching lying-in patients have unconsciously perforated the soft uterine wall with the nozzle of the syringe and delivered the solution into the peritoneal cavity.

One of the most serious complications of injury to the unimpregnated, as well as the gravid uterus, is extrusion or prolapse of the intestine.

Operators have recovered large pieces of the intestine under such circumstances under the impression they were dealing with the uterine contents, and have only discovered their mistake when too late. Under such circumstances coeliotomy must be performed and any damage repaired immediately. Under some circumstances where the prolapse of the bowel through the uterine perforation is recognised immediately it may be sufficient to put the gut back through the opening. In one such case the patient did well and had two subsequent pregnancies.

"The dexterous operator may use any instruments for which he has a preference; for him the art lies not in the instruments but in the hand."

There is another class of gynaecological operation in which the uterus runs great risk of rupture, namely in that known as vaginal myomectomy. In the effort to dilate the canal the dilator is pushed through the uterine wall. Vaginal hysterectomy is advisable in such cases.

Desperate measures have been adopted from time to time by women who wished to bring on miscarriage or abortion, and the result has been disastrous in the extreme. A gravid uterus in the later months of pregnancy is a large organ and may be severely injured by blows or kicks, or butts from animals, falls upon the belly or downstairs, or the woman may be run over. As a general rule it may be stated that the most satisfactory mode of treatment is coeliotomy; this permits a thorough examination of the organ and facilitates removal of the effused blood. In the late stages of pregnancy accidents of this kind entail caesarian section.

Rupture of the uterus during labour.—This may be spontaneous, or may be due to the use of instruments, or may result from "turning". There are three methods of dealing with this condition:

1. Treat the patient conservatively, which means at the most packing the part with antiseptic gauze; this must be done lightly.
2. Performing coeliotomy and suturing up the rent in the uterus.
3. Hysterectomy preferably by the abdominal route, as this enables the peritoneal cavity to be cleared of clot.

Opinions differ as to which of these methods of treatment should be adopted. The only point on which there is any semblance of unity is this: In cases of complete rupture in which the fetus and membranes are extruded from the uterus into the abdominal cavity, coeliotomy is indicated. When there is dangerous bleeding Klein advises immediate operation.

Injury to the gravid uterus in the course of abdominal operation.—When this results there are three courses open to the surgeon:

1. Sew up the incision in the uterus.
2. Perform cesarean section.

A careful consideration of the reported cases indicates that the best results follow for the patient when the surgeon performs cesarean section.

When the uterus has been wounded by a bullet, the best method of dealing with the case is undetermined. Coeliotomy with resection of injured bowel and hysterectomy seems to be indicated in most cases.

R. T. B.
Correspondence.

DEAR DOCTOR: Enclosed please find specimens of a kind or kinds of weed that gives me a good deal of trouble every spring. By the natives it is widely used as a vegetable, and they report that about one out of every hundred that eats the smaller leaved variety is poisoned.

I only know that when poisoned the result is fearful. The face is swollen until the head appears perfectly round; the hands also are affected in the same way. There are no intestinal symptoms, no signs of poisoning until the swelling appears a day or more after the ingestion of the plant. They develop high fever and then a superficial gangrene limited strictly to the exposed part of the body. Under the clothing there is no edema and no gangrene. This is one of its most striking points to me as I have noticed in one or two cases when the clothes had been worn open that the gangrene extended on the breast to the same extent. The pain accompanying the active inflammation is very great and nothing short of opium seems to relieve it. I have not been able to prevent the gangrene with its accompanying loss of skin and ultimate scarring. So far none that I know of have died. Have one in hospital now that will probably lose her finger despite the fact that radial pulse is good. The skin involvement is to about the same extent as a second degree burn.

I hope you may be able to give me light on the nature of the plant and as to what may be the cause of its erratic action. Any remedy that you may advise, I will gladly try to see if the long drawn out process can be cut short and the unfortunate victims spared some of the pains.

Yours very truly,

A. A. McFADYEN.

EDITOR OF JOURNAL.

DEAR SIR: Through the medium of the JOURNAL I am writing to make enquiries upon the subject of "Spreading Gangrene." During the last two years I have had three cases turn out rather badly, in spite of everything that could be done for them, and the effect has been to make me doubt the assertions of all three patients that the initial condition was caused by frostbite. Perhaps I had better outline the cases:

No. 1. Admitted for gangrene of middle toe of left foot; toe was black and showed line of demarcation at the metacarpo-phalangeal joint. My assistant amputated at this point by an ordinary racket incision. Everything went well for three days, but at the first dressing on the fourth day the skin round the incision was black and blebs were beginning to form on the dorsum of the foot. The temperature went up to 102° Far. and the man was very uncomfortable. Each day the gangrene had increased, until at the end of a week all the foot below the ankle was black and gangrenous. The patient feeling that the "luck" was rather against him, at the advice of his friends, went home, and I have not heard about him since, as he lived some distance off in the country. Patient aged 43. No signs of any other diseased condition.

Case No. 2. Patient aged 45, male. Admitted for "frostbite;" the leg having, previous to admission, dropped off at the ankle from gangrene. The stump was sloughy, but the surrounding skin quite healthy. I amputated at seat of election, at junction of upper and middle third of leg, being anxious to give him enough
stump to wear an ordinary artificial "peg leg", which a local carpenter could make. The operation was without incident. The fifth day the dressing was changed, and both flaps were found black and gangrenous. At the operation the flaps were cut specially long, and sufficient drainage was allowed. After many days, when the tissues had all sloughed clean, I again amputated, not at the knee joint but just below it, only to be followed by a further sloughing of the flaps and some of the muscular tissue. After some weeks, when the sloughs had separated, I was enabled by strapping to get about one-half the amputation sight closed in, but at the suggestion of further operative treatment to close the remainder he took himself home to the country and has not been heard of.

Case No. 3. Male, aged 28. Admitted for "frostbite" gangrene of left "little toe." At the time of admission the toe was black and hard; the line of demarcation being at the metatarsophalangeal joint. The second and third toes had a patch of black at the tip. The little toe was amputated at the joint mentioned by a racket incision, but I noticed at the time that although the tissues appeared quite healthy there was not enough blood to stain the cotton swab. The incision was only partly closed by sutures. On the fourth day, when the dressing was changed, there had been enough bleeding to stain the dressings, and the edges of the wound were red and inflamed; the two stitches were removed and a dry antiseptic pad applied. The same day the temperature began to rise and the patient complained of considerable pain. Dressed next day and found about two inches of black gangrene on the dorsum and outer side. Temperature 103.6. Day by day the gangrene spread, until the whole of the foot, to about an inch above the ankle joint, became black. The foot and leg were well swathed in cotton wool and covered with dry antiseptic powder (Ferris's); and with tonics, stimulants and good feeding the temperature began to fall to about 100, and I expected the gangrene would stop at the point mentioned. I was disappointed; the temperature ran up again to 104 with only slight morning falls, and the gangrene began to travel up the leg. In the meantime the patient was in a bad way, with a slight amount of delirium and rough brown tongue, but pulse kept good. Urine and faeces were passed in bed. Sloughing patches found over the sacrum, and a secondary infection (pyemic) started in the middle joint of the right hand third finger. As it was evident he would succumb, much against my will, his friends removed him and commenced to take him 400 li to his home. Have not heard the consequences.

Now what is this? Ordinary gangrene, or something special? Did I hear some one say carbolic? Well perhaps! The second case never said carbolic, for I was able to operate on a surface easily cleaned, and so the dressings were sterilized, and nothing but sterilized water used. The two "toe cases" had a solution of carbolic acid 1:6o used at the operation and sterilized gauze dressings. I cannot admit carbolic as the cause; it was Calvert's pure, and certainly not stronger than stated and the condition commenced immediately after the operation; it had not been constantly applied over a large surface. Further, in the second case the amputation was below the site when a flap operation can become gangrenous, due to cutting off the blood supply coming from the recurrent tibial.

Was it Reynaud's disease? Certainly in the last case the foot was cold and probably underneath the dirt was whiter than usual, but by the time it was scrubbed clean for operation the stimulus had made it appear normal, except that there was no bleeding when cut. There was no previous history to be obtained as to suffering excessively with cold feet. There were no mental or nervous symptoms of Reynaud's, and certainly never any haemoglobinuria. I've seen a fair amount of frost bite, on the Labrador Coast, but not of the kind shown in the first and third cases, and further, although the patients attributed the condition to frost, I don't think the weather was sufficiently severe at the time to produce it.

If it is Reynaud's disease, is there any objection to amputation? And
are these cases likely to lead to spreading gangrene, and are there special precautions to be taken at the time of operation?

Finally, for I don't want to make this note long with argument or debate, is it possible that the condition may be due to "food?"

All three patients were country labourers. I have not seen ergot gangrene, but these cases certainly had none of the nerve symptoms of ergot poisoning in the spasmodic form. Pellagia and Lathyrism are not characterized by gangrene. I hope some of your readers, who have been in China, as many years as I have months, may give me the benefit of their experience.

Believe me, yours sincerely,


Peking, May 4th.

Editors of Journal.

DEAR SIRS: Will you kindly tell me if a name has been settled for a disease which we see so much of here in North China and further inform me of any treatise on the subject? The facts as I see them here are as follows:—

1. Always in children; youngest eighteen months, oldest ten years.
2. Most profound anaemia—of the chlorotic type—mucous membranes almost yellow.
3. Enlargement of spleen down to umbilicus and in severe cases almost to pelvis.
4. Diarrhoea and clay-coloured stools, irregular. Some have 12-15 motions a day and others obstinately constipated.
5. In the late stages always some necrosis of upper or lower jaw. The mildest cases have a black necrotic patch on the gums over the upper central incisors, gradually spreading until the teeth drop out. The worst cases have had necrosis of upper jaw on both sides, and nose and in one case everything was gone to the orbital margins. In another case the whole of the left lower jaw was removed by daily syringing and dressing.
6. The uselessness (apparently) of my treatment.

Some cases improve slightly if seen before the stage of necrosis, and one case I thought after three or four months had been cured, but failed in the end. I give a "shot gun" prescription of quinine, hydrarg creta and sacharated iron.

I see from 10-20 cases a year. I have many suspicions about the disease, but want the opinions of older men than myself who have more time to devote to the study of parasites, and my eagerness is due to my complete failure in treatment.

Hoping for replies.

Yours sincerely,


Peking, May 18th.

DEAR DR. JEFFERYS: Yours of the 9th came to hand to-day. "Give still unhung. A CALF ENOUGH ROPE AND HE'LL HANG HIMSELF." You are tempting this calf with a "powerful long" rope, Mr. Editor. It is as bad as treating disease by mail or marrying through a matrimonial agency.

I took a fairly long shot the other time and hit the mark, but it might be hard on my reputation if I took three more in print and didn't hit a single one.

I will take one or two tries (strictly in private till I look at the target). The photos, you send of No. 1 resemble pollen grains more than anything of which I can think. When of the form resembling that in the picture, the center is yellowish and often contains oil globules (having a high refractive index). At the ends are small air bladders which enable the grains to be carried by the wind in wind
ertilized plants, e.g., the pines. Sometimes the air-sacs have markings. In case there are none, the air-sacs often suggest "an expansion of the exine" of a spore, which in a sense they are.

I am not at all sure what No. 2 is, not even enough to make a guess. Perhaps if I saw the "critter" I might be able to identify it.

No. 3 is possibly a spore of one of the "smuts" (Ustilaginaceae), but of that I am by no means certain.

I wish I could give you some really valuable advice as to books. In the line of Vegetable Histology, I think Vine's Students' Text Book of Botany is as good as any of which I know. As to a Systematic and Descriptive Book on Fungi, I am at a loss to know what to suggest. I work entirely from "keys" and descriptions compiled from government reports and State Experiment Station Bulletins, etc. That means that the sources are scattered all over botanical literature. There must be some book on this subject. The only one of which I know was published in 1886, so that it may be quite out of date. It is de Bary's Comparative Morphology and Biology of Fungi, Mycetozoa and Bacteria. Moreover it is expensive, £1.2.6. It is published by the Clarendon Press, Oxford. I doubt whether it is worth the cost now. There certainly must be something better by this time. As I wrote before it is now ten years since I was actively interested in Fungi, and I have not had the opportunity to keep abreast of the times. If you are still interested, and will let me know, I shall be glad to write to my former teacher, of whom I spoke in my last letter and ask him for a list of up-to-date books on these subjects.

Cordially yours,
CHARLES W. YOUNG.

UNION MEDICAL COLLEGE,
PEKING, April 17th.

EDITOR OF JOURNAL.

SIR: I have read with much interest Dr. Cormack's article on the "Opsonic Index of the Blood." Is there not, however, a possibility that this "latest method of diagnosis and treatment of disease" may prove to be of academic interest rather than of practical use? There lies before me as I write an article by Dr. T. J. Horder, of London, in the St. Bartholomew's Hospital Journal which is eminently practical. He points out therein how much the personal equation of the operator comes in and what large chances of error also tend to vitiate the result.

The highly fallible conditions underlying the technique of "opsonic index" determinations must strike all careful observers. I do not speak of the operator but of the operation itself. The bacterial suspension: the difficulties in obtaining a uniform emulsion can only be realised by those who choose to be fastidious in this matter. Yet the aggravating clumps of tubercle bacilli seem to cause no anxiety as to the count in some folks' minds. The "opsonic index" (to two places of decimals) of a patient's serum to a strain of conglomerate streptococcus is by some rattled off with ease and the result taken as the guide in treatment without hesitation. The serum: twenty-four hours coming through the post and waiting at this end until things are ready for the estimation. The leukocytes: jostled, washed, and rinsed; kept for some hours, it may be, at all sorts of temperatures, except that at which they are accustomed to live. Yet we are asked to believe that all these things are nicely re-adjusted by fifteen minutes' admixture...
Correspondence.

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...result in the normal slide a corresponding one could be found in the tubercular slide, or one as near to it as is allowed by opsonists to be within the limits of variation in the normal. It therefore follows that, as it is a mere chance which set of 50 cells will be counted in each of two films that are being compared, a high normal count may occur with a low tubercular count, or vice versa, or both counts may yield the same results. The counts cannot therefore give reliable evidence of the presence of a "positive" or "negative phase". These authors show that enormous variations may occur in the results obtained from using different capsules of blood taken at the same time, and also in the results of two workers using the same capsule. Cogent reasons are given for regarding any count of less than 1,000 cells as liable to give a false result! Truly, he who would be an opsonist must scorn delights and live laborious days! If the very thorough investigation undertaken by these observers finds confirmation elsewhere by equally competent bacteriologists and haematologists (the addition of a competent mathematician would, perhaps, be an advantage), "opsonic index" estimations, as they are at present determined, must be regarded as an encumbrance rather than an assistance in the treatment of disease.

Dr. Horder uses bacterial vaccines and does not write in any doubtful way about their utility. It is the opsonic index as a guide to treatment which he questions, and I must say that the objections seem to me very real ones. Treatment that involves as much personal equation as this seems to do, must of necessity differ little from empiricism.

I am,

Yours truly,

J. PRESTON MAXWELL.

YUNGHUN, April 13th.

DEAR DOCTOR: Our great West China Missionary Conference is over. Nearly 200 missionaries registered. The conference was very helpful indeed. It adopted as its ideal "One Protestant Christian Church for West China", and
took several very practical steps toward the realization of this ideal. The spirit of unity and fraternity was splendid.

We secured the appointment of a large standing committee to bring the evils of the cigarette habit to the attention of the local and central governments and of the British and American governments.

Very sincerely yours,

CHAS. W. Service.

KIATING, WEST CHINA, February 5th.

DEAR DOCTOR: We returned to China from furlough last month and have resumed work at Chinkiang. Dr. and Mrs. Shackleton are staying on here and are taking up the work of the Chinese hospital, while we look after our little Home of Rest and also the station work. I am also doing a little dentistry for our missionaries.

We spent our furlough in South India, which is our home. I was much interested in revisiting the work of the Neyoor medical mission in connection with the London Missionary Society. It is said to be the largest medical mission work in the world by Prof. Currie Martin. It has about a dozen branch dispensaries scattered all over South Travancore, and last year the total number of patients seen amounted to 79,805. These branch dispensaries are in charge of native men who have been fully trained at the Neyoor medical school. They are earnest medical evangelists and do good reliable work.

I also spent a few weeks at the Salvation Army hospital at Nagercoil, under Dr. Percy Turner’s care. During his absence on furlough Dr. Mumford is in charge. They make the work self-supporting by charging for all the medicines given, both to dispensary and in-patients. Also by having private wards for paying in-patients. Each ward has a kitchen attached. These are used by caste people. They use the metric system throughout and have a qualified chemist, who takes entire charge of the drug department. In this they use the standardised fluid extracts and glycerine preparations. Dr. Turner is an eye specialist, and does a good deal of refraction work, and also supplies the lenses.

All the hospital buildings are in the ground floor spread over a large area.

The out-patient records are kept in large books, and each patient has a number. A separate number for men and women. These numbers have been going on for eight years or so, ever since the hospital has been started. I think they get a fresh number for a fresh disease, but I am not sure.

Well, we are glad to get back again and to work in Chinkiang. May this term of service be more fruitful than before in the Master’s work.

Believe me, yours sincerely,

GEO. A. COX.

CHINKIANG, May 6th.

DEAR DOCTOR: You may think it worth while to put in the JOURNAL notes about a woman who attended the out-patient department here.

More Gangrene from Frost. On the 28th May, about 7 p.m., we had a fall of hailstones about the size of a walnut. The sky had been clouded and looked like an ordinary storm of thunder and rain; but a strong north wind came, blowing lots of dust, then thunder and lightning, and there was a noise like bullets falling on the roof. I picked a few hailstones up; they were like small blocks of ice, and putting three or four in a
Correspondence.

glass of water it soon made a cool drink.

The next morning a woman came to the dispensary with very swollen face and hands, which she said were the result of being out in a wheat field when the hail and wind came. The following day she seemed worse, the cotton wool and bandages she had taken off her hands, her eyes could not be opened, her throat seemed affected, her lips were greatly swollen and her hands cold and blistered. I gave her digitalis and strychnine, and on Monday she reappeared much better; the eyes were open and the face much less swollen, but the cheeks very red and the capillaries dilated.

The blisters on hands had broken and clear fluid was exuding, but the tips of the fingers were black, and though she could move and said she had sensation in them, they looked almost gangrenous. Was it a case of frost bite in summer or could the lightning have in any way caused her trouble.

Only the face and hands, the parts exposed, being affected, would point to the hail as the cause; would it not?

Again thanking you with kind regards,

I remain sincerely yours,

W Shackleton.

Chinkiang, June 2nd.

My Dear Doctor: Could we have your assistance in a rather important investigation we are conducting concerning the possibility of decreased expense and increased convenience in the matter of securing drugs and other supplies for mission hospitals? For some time past a number of business men have felt that there might be such a thing as increased economy and efficiency in missionary administration if there could be established a central bureau, under the official sanction and supervision of the missionary boards, which bureau would serve as a clearing house for all missionary societies in many forms of administrative work.

One of the departments of such a bureau would be the purchase and supply department, aiming to assist the missionaries in getting such supplies as they need on as advantageous terms as possible, and one of the special phases of the supply department work, in turn, would be to assist in securing drugs

To the Editor of "The China Medical Journal."

Mucilag. Mosquit.

I have accidentally done a rather interesting experiment. Last summer (?) I made up some mucilage of acacia. Had not used it for a long time, when one day, during the winter, found there were twenty (or thereabouts) larvae in the solution; stoppered the bottle with oakum—last week they began to change to mosquitoes; clearly a case of hibernation of larvae. (Giles quotes Celli on this point I believe.) They are not anopheles.

Yours sincerely,

R. T. Shields.

Dongshang, May 27th.

Dear Dr. Jefferys: Thanks for the reports on specimens received yesterday. I am trying to learn something about bugs in general, malaria especially. I don’t get as clearly defined corpuscles using B. W. and Co.’s “soid” Romanowsky stain (using Merck’s alcohol) as I do using Ehrlich’s triacid. Is the fault with the stain or me?
and supplies for missionary hospitals as advantageously as possible. It is felt that some gain might be made, first, by purchase of drugs and supplies in wholesale quantities in behalf of all the missionary hospitals of the world; and, second, that there might be an additional gain by securing such supplies from a sympathetic, missionary spirited Christian manufacturer, who might be willing to furnish the supplies at approximately manufacturer’s cost price.

In order to enable us to judge whether or not there is any substantial gain to be effected by any such co-operative bureau, would you be willing to write on the margin of Schieffelin and Company’s catalogue, which I am sending you under separate cover, the price which you are now paying f. o. b. (London, New York or Berlin, as the case may be) for the staple drugs or supplies of which you use the largest quantities? Second, we do not necessarily ask for the name of the firm which makes you the price quoted on the margin, but we would appreciate having you indicate the country where the price is secured, say, A for America, E for England, G for Germany, J for Japan; and if, perchance, the freight is also prepaid at the price quoted, add the letters Frt; otherwise we will understand that the price of transportation is added to the figure quoted. Third, will you kindly indicate the total amount of supplies that you purchase from various countries in the course of the year, and also, if convenient, the average size of your orders?

I need not assure you that we will appreciate your personal judgment concerning the feasibility of the plan suggested and any other facts that you think will be of assistance to those who are giving the question their careful consideration.

Sincerely yours,

C. V. VICKREY, Secretary.

Young People’s Missionary Movement (Incorporated.)

New York, April 23rd, 1908.

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Personal Record.

BIRTH.

At Kuling, on May 30th, to Dr. and Mrs. George A. Huntley, of Hanyang, a son (Wilfred Eliot).

MARRIAGE.

At Shanghai, 24th June, Dr. John C. Carr to Miss Dorothy Hunnybun, C. I. M.

DEPARTURES.

31st May, Dr. J. R. Wilkinson, S. P. M.; Dr. I. M. Hotvedt, H. S. M., for U. S.

8th June, Dr. J. A. Beam, R. C. U. S. M.

13th June, Dr. and Mrs. J. Menzies, C. P. M., for Canada.

20th June, Dr. and Mrs. Chas. Lyon, A. P. M.; Dr. and Mrs. Jas. Butchart, F. C. M.; Dr. A. Z. Hall, A. B. M. U., all for U. S. A.