PLATING FRACTURES.

W. S. Thacker, M.D., F.R.C.S., Peking.

The results arrived at by the Fracture Committee in England in 1912, have given a great impetus to the surgery of fractures. This committee demonstrated the fact that though it is possible to obtain a high percentage of good results in children (under 15) by operative or by non-operative treatment, yet the aggregate results of non-operative treatment in those past childhood (over 15) are not satisfactory. Furthermore, the older the patient the worse is the result. This committee proved that mobilisation and massage have not secured a high percentage of good results and should only be employed as a supplementary method of treatment. As regards fixation by wire or other suture the results were found to be unsatisfactory except in cases of fracture of the olecranon. The committee considered that operative treatment should not be regarded as a method to be employed in consequence of the failure of non-operative measures, but rather the operation should be performed as soon after the accident as practicable (three days). However, the committee were of the opinion that non-operative procedures were more safe and serviceable for surgeons who were unable to avail themselves of surroundings that ensure asepsis.

STEPS OF DIFFERENT OPERATING MEASURES.

The first essential is asepsis. The ordinary precautions are insufficient in these cases where large quantities of foreign material may be embedded in the tissues. The tissues are lacerated and their resisting power to the entry of organisms is depreciated proportionately to the damage they have sustained. The abdominal tissues are capable of dealing with a considerable number of organisms, whereas operations upon bones under similar circumstances would be followed by sepsis.
Conroy's Disease.
Attitude of head and paraplegia.

Spinal Accessory Paralysis.
Characteristic attitude.
The finger, though gloved, should under no circumstances be allowed to enter the wound and ideally no part of any instrument which has touched the glove should enter the wound. It is for this reason that all Lane’s instruments have long handles.

The skin should be prepared with 2% iodine in rectified spirit, applied the night before and applied twice on the operation table. The incision must be long enough to give free access to the fragments and so minimize damage to the soft parts. In the case of the thigh the incision is 8–10 inches long, in the leg 6–8 inches long. A sterilised cloth is attached to each edge of the incision by forceps in such a way that the surface of the skin of the patient is altogether excluded from view and consequently from the field of the operation. Thus infection of the wound from the skin surface is guarded against.

All bleeding is controlled by forceps, which are left on a sufficient time to obliterate the lumen. Generally ligatures are unnecessary, but if bleeding continues the finest catgut is employed.

The outer surfaces of the fragments are now freed from muscle, the ends freely defined and the periosteum divided and separated if necessary. To separate the muscles and aponeuroses on the posterior surfaces is difficult, so the assistant kinks the limb and the surgeon divides the soft parts by repeated small cuts against the bone on either fragment. In an old fracture it is these posterior soft parts, consisting of scar tissue and contracted insertions of muscles that prevent reduction. As the resisting structures are being cut, the two fragments form an angle, which becomes more and more acute. Traction to reduce overlapping necessitates the exercise of much force, during the exercise of which the wound may be infected. However, if now each fragment is protruded at a converging angle beyond the wound, each in the grasp of a forceps, their ends may be easily coapted while extending the fragments on one another by straightening the limb beyond the fracture. In manipulating the ends of the bones, Lane’s or Lambotte’s clamps are employed.

Fixation can be completed by Lane’s steel plates or by Sherman’s vanadium plates or by Hey Groves’ intramedullary pegs or by Abbé’s bone graft or Magnuson’s absorbable ivory plate and screws.

I have up to my last cases used Lane’s instruments and his plates and found them very satisfactory. In my last cases I used Sherman’s plates. They are stronger and lighter. I also used Sherman’s screw driver. It holds the screw and so one is not tempted to handle the screw. The assistant gets tired holding Lane’s clamps, whilst Lambotte’s or Lohman’s are self-retaining. I now have Lohman’s clamps.
Plating Fractures.

and shall use them in future. I use a twist drill as Lane's awl drill would seem to require much force. One should refrain from extracting loose fragments else slow union or pseudarthrosis is the result. In cases of comminution Lane fixes a long steel plate to the lower fragment and fastens to that fragment the smaller pieces by screws and small plates and subsequently secures the upper fragment to the long plate. In such a case I have found a circle of wire round the plate and bone including the loose fragment a great assistance.

In old fractures it is not necessary to cut away bone till large areas of fragments can be brought into apposition, since a considerable interval will fill up with callus if the part be kept engorged with blood. Lane affects this by getting the patient upon crutches with the limb in a modified Thomas's splint. Personally I employ Bier's bandage for 22 out of 24 hours. I apply it just above the knee joint in case of fractured tibia and near the groin in case of a fractured femur.

Except in fracture of the femur, Lane does not suture the deep fascia. For the skin he uses Michel's clips.

Lane does not approve of plating compound fractures. However, at the Royal Infirmary, Leicester, Mr. Cumberledge plated a compound fractured tibia from a street accident, which healed by first intention. Mr. Harkness did likewise and the wound healed except for a small sinus, which necessitated removal of the plate.

The open operation allows one to coapt the fragments in a straight line and so prevents rheumatoid changes in the joint below (Lane) and allows one to introduce an internal splint (plate), the removal of which can be done in a few moments under Novocaine anesthesia.

A third case was a fractured radius and ulna with all the superficial flexors and some of the extensors divided. I plated the radius and sutured the muscles. The wound healed without removal of the plate. It is my custom to fill these wounds with tc. iodi and then to apply Michel's clips and dress with picric acid 1% in spirit daily. Walton at the London Hospital and many American surgeons do plate compound fractures. Where possible, Lane buries the plate in muscles; however, in plating the tibia, it is easier to apply the plate on the subcutaneous surface. On three occasions on which I have done this I have not found it necessary to remove the plate. The most important points in plating a fracture are:

1. Perfect asepsis.
2. Reduction not by extension but by protrusion of the fragments at a converging angle and subsequent straightening of the limb.
3. Kinking of the limb by the assistant, and division by the surgeon of the soft parts on the distal aspect of the bone.
In Peking, the fractures I plated with Dr. Wheeler were:—

Case I.—A man came in with a fractured tibia of two months' standing. It was set at an angle. The skin was atrophied over the projecting lower fragment and the bone seemed to be almost about to perforate the skin. Reduction necessitated the removal of callus and the projecting angle of the lower fragment. A Lane's plate was inserted on November 3rd, 1913, but a persisting sinus due in great part to the unfavourable condition of the skin, necessitated removal of the plate on January 9th. The fracture at the second operation was found to be firmly united in a straight line.

Case II.—A rickshaw coolie was brought in off the street on November 3rd, having a transverse fracture of the femur. We waited three days to allow the lymphatics to act and the tissues to recover. On November 6th we inserted a plate. The wound healed uneventfully and the patient left hospital with the plate. During convalescence the leg became edematous, evidently a lymphatic obstruction. Bandaging and raising the end of the bed removed the edema.

Case III.—Man came in with a fractured tibia of three months' standing. Like Case I it was set at an angle. So atrophied was the skin over the lower fragment that an ulcer had formed. This necessitated delay. Eventually we found reduction demanded an osteotomy through the line of fracture and removal of the projecting fragment. We inserted a Sherman's plate and used his screw driver, which greatly facilitated the operation. The wound has healed uneventfully. Union is not yet firm so we are getting the patient up on crutches as mentioned above:—

References:
Annals of Surgery, Dec. 1912, Oct. 1912, Nov. 1912,
B. M. J., Nov. 30 1912, Oct. 26, 1912,
Epidemic Cholera in Canton, China.

EPIDEMIC CHOLERA IN CANTON, CHINA.*

WM. W. CADBURY, M.D., AND J. ALLEN HOFMANN, M.D., CANTON.

No one who has never been called to attend patients suffering with Asiatic cholera, in its virulent epidemic form, can realize the sense of despair that seizes one when faced with this disease. Men and women in the prime of health are stricken down and die in from three to twenty-four hours after the onset of the malady.

The history of cholera is not an inspiring one, especially the therapeutic phase of it. Opium, which at one time was considered to be the sheet anchor remedy, is now thought by most authorities to be a most deadly poison to the cholera patient, decidedly lessening his chances of recovery. Serums are of little if any avail in the treatment of this most deadly disease. The first landmark in really effective therapeutics is found in Leonard Rogers' excellent monograph entitled "Cholera and Its Treatment." Every physician who lives in regions where cholera is endemic or occasionally epidemic, should read this comprehensive treatise on the subject. The essential basis of Rogers' system of treatment consists in the administration of hypertonic saline solutions intravenously, subcutaneously, and per rectum, together with a solution of permanganate of potassium in copious draughts by the mouth. The hypertonic solution is made as follows.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride</td>
<td>8.00 gm</td>
</tr>
<tr>
<td>Calcium Chloride</td>
<td>0.25</td>
</tr>
<tr>
<td>Potassium Chloride</td>
<td>0.40</td>
</tr>
<tr>
<td>Water add</td>
<td>568.00</td>
</tr>
</tbody>
</table>

The present paper is a description of cases of cholera treated in the summer of 1913, during an epidemic of cholera in Canton, of moderate severity. The epidemic appears to have started in Hohnam, that is the southern section of the city, and it was first discovered among the patients in the John G. Kerr Refuge for the Insane. The source of the contagion in the hospital was undoubtedly the water. Every day at high tide the campus was flooded, the water flowing in from the near-by canals and the river. How readily this water is contaminated is only too well known by everyone. To prevent the insane patients from drinking this contaminated water was an impossibility and so the disease spread.

Unfortunately, we were ourselves unable to examine the stools bacteriologically. However, specimens were sent to Dr. Chan, the city

* Paper read at a regular meeting of the South China Branch of the China Medical Missionary Association, held in Canton, January, 1914.
bacteriologist, and he reported the isolation of the specific spirillum from the dejecta.

The nature of the disease was very severe. Some cases passed away in but a few hours after the onset of symptoms. There was an initial diarrhea, becoming rapidly worse until the typical rice water stools appeared. There was general prostration followed by shock and death, or in the more favorable cases by reaction. This reaction either resulted in recovery or was followed by symptoms of uremia, with death in some cases. In the favorable cases the reaction gradually passed into a stage of convalescence.

At the insane hospital there were none of the usual facilities required for the treatment of cholera. A matshed with a very rough and uneven floor was utilized as the isolation hospital. It was divided into two compartments by mats. The men were placed in one side and the women in the other. There were no nurses of any kind but only untrained coolies to watch the cases, so that it was deemed unwise to place the patients on elevated beds. Bed boards were therefore laid on the floor of the matshed and the patient was placed on these. The awkwardness occasioned to the attending physician by this position may be imagined. Of course one could not sit or kneel on the floor which was bathed with dejecta continually passing from the anus and mouth of the patients.

There were as many as fourteen patients under treatment in the matshed at one time, in all stages from that of beginning diarrhea to convalescence or death.

The hospital having no apparatus for transfusion, an attempt was made in the early cases to give subcutaneous injections only. These appeared to have little, if any, effect. Finally cannulae and rubber tubing were obtained and the cases treated by intravenous transfusions. The materials used were the following:

One kerosene tin.
Native iron rice pot.
Brass tin holding over two pints (used for giving enemas).
Rubber tubing.
Enamel ware funnel.
Tin dipper.
Needle used for giving antitoxin injections.
Unrefined, raw salt.

The salt was dissolved in river water or cistern water, a solution of approximately 0.65% being prepared. This solution was boiled on a "fung lo" in the kerosene tin or iron pot for not less than fifteen
minutes. A rather heavy muddy precipitate formed during the boiling and continued to form while cooling. This solution was warmed again for use or mixed with a hot solution to bring it to the proper temperature and filtered by placing a plug of sterile cotton in the neck of the funnel.

Without adequate assistance and with the patients (most of whom were quite demented) lying on the floor, the difficulties of transfusing several pints into each case may be imagined. The enema can was attached to an upright stick and filled with the filtered saline solution. The air was forced from the attached rubber tube. The rubber tube was interrupted not far from the needle end by inserting a short glass tube. Thus the shorter rubber tube with cannula attached could be separately boiled for each case.

The instruments were sterilized in a solution of camphor and carbolic acid. The first transfusion was generally given in the veins of the left arm and subsequent injections were made into the right arm and the veins of the foot and leg. The rate of flow was regulated by raising and lowering the tin. The temperature was also controlled in a measure by the same procedure, but in the main by adding cold or hot solution to that still remaining in the tin. By using a long rubber tubing the solution could be kept at a temperature of about 70 degrees centigrade and by the time it reached the vein it was reduced to the proper temperature. The fact that by pressure on the skin immediately over the point of the cannula one could feel the flowing of the solution running into the vein, was of great assistance in determining the rate of flow.

The total quantity of solution administered to any one patient varied from six to ten liters. During the transfusion the cases were as carefully watched as circumstances permitted. As a rule the injection was continued until the flow of water from mouth and rectum indicated the saturation of the circulatory system. The pulse by this time would become full, all cramps would disappear and the patient express himself as feeling comparatively comfortable. Frequently before the transfusion was completed, the patient was seized with a severe chill, lasting from fifteen minutes to half an hour. Some patients were filled with fluid even beyond their normal body weight without any signs of discomfort or embarrassment to pulse or respiration. In no instance was there any evidence of infection from the saline solution, that is septicemia, and although the strictest provision against the entrance of air into the veins was not always observed, no serious symptoms were noted in any case during the operation.
Besides the transfusion of saline solution there was practically no treatment given to the patients except the administration of dilute sulphuric acid; after the period of shock had passed and vomiting ceased, milk was cautiously given at first, followed later by congee and soups. Cases of uremia, the most fatal of the complications, were treated with diuretics. Some of the violently insane were wrapped in blankets and covered with a cage. They were placed on a brick pavement exposed to the direct rays of the sun. The head was carefully shaded with an umbrella or screen. The hot August sun of Canton proved to be quite sufficient to cause a profuse sweat.

The following tables were prepared by Dr. Hofmann, showing the results of treatment of the insane patients at the John G. Kerr Refuge during the epidemic of 1913.

**TABLE I.**

MALE CHOLERA PATIENTS WHO WERE TRANSFUSED AND RECOVERED.

<table>
<thead>
<tr>
<th>Hosp. No.</th>
<th>No. of Trans.</th>
<th>Age</th>
<th>Mental Diagnosis</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2561</td>
<td>1</td>
<td>42</td>
<td>Paresis</td>
<td></td>
</tr>
<tr>
<td>2512</td>
<td>1</td>
<td>25</td>
<td>Depression</td>
<td></td>
</tr>
<tr>
<td>1899</td>
<td>1</td>
<td>24</td>
<td>Dementia Precox (Hebephrenic)</td>
<td>Police case.</td>
</tr>
<tr>
<td>2572</td>
<td>1</td>
<td>38</td>
<td>Dementia Precox (Hebephrenic)</td>
<td>Private case.</td>
</tr>
<tr>
<td>619</td>
<td>1</td>
<td>23</td>
<td>Epilepsy (Imbecile)</td>
<td>Police case. Taken in early. Gave 25 pints saline solution.</td>
</tr>
<tr>
<td>2036</td>
<td>1</td>
<td>36</td>
<td>Dementia Precox (Hebephrenic)</td>
<td></td>
</tr>
<tr>
<td>2647</td>
<td>1</td>
<td>30</td>
<td>Dementia Precox (Hebephrenic)</td>
<td></td>
</tr>
<tr>
<td>941</td>
<td>2</td>
<td>38</td>
<td>Dementia Precox (Hebephrenic)</td>
<td></td>
</tr>
<tr>
<td>1669</td>
<td>2</td>
<td>33</td>
<td>Dementia Precox (Hebephrenic)</td>
<td></td>
</tr>
<tr>
<td>2112</td>
<td>3</td>
<td>43</td>
<td>Not diagnosed</td>
<td>Died later of dysentery.</td>
</tr>
</tbody>
</table>

**TABLE II.**

FEMALE CHOLERA PATIENTS WHO WERE TRANSFUSED AND RECOVERED.

<table>
<thead>
<tr>
<th>Hosp. No.</th>
<th>No. of Trans.</th>
<th>Age</th>
<th>Mental Diagnosis</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2620</td>
<td>1</td>
<td>18</td>
<td>Manic Depressive (manic)</td>
<td>Taken early.</td>
</tr>
<tr>
<td>2600</td>
<td>1</td>
<td>26</td>
<td>Manic Depressive (manic)</td>
<td></td>
</tr>
<tr>
<td>1969</td>
<td>1</td>
<td>40</td>
<td>Manic Depressive (manic)</td>
<td>Private patient.</td>
</tr>
<tr>
<td>2406</td>
<td>1</td>
<td>28</td>
<td>Dementia Precox (Hebephrenic)</td>
<td>Private. Tuberculosis.</td>
</tr>
<tr>
<td>2377</td>
<td>1</td>
<td>24</td>
<td>Manic Depressive (manic)</td>
<td></td>
</tr>
<tr>
<td>2381</td>
<td>1</td>
<td>48</td>
<td>Manic Depressive (manic)</td>
<td></td>
</tr>
<tr>
<td>1842</td>
<td>2</td>
<td>23</td>
<td>Manic Depressive (manic)</td>
<td>Saline also given subcutaneously.</td>
</tr>
<tr>
<td>2373</td>
<td>2</td>
<td>17</td>
<td>Dementia Precox</td>
<td></td>
</tr>
<tr>
<td>1707</td>
<td>3</td>
<td>60</td>
<td>Senility</td>
<td></td>
</tr>
<tr>
<td>A Luk</td>
<td>2</td>
<td>40</td>
<td>Sane</td>
<td>Outside patient.</td>
</tr>
</tbody>
</table>
Epidemic Cholera in Canton, China.

### TABLE III.

**MALE CHOLERA PATIENTS WHO WERE TRANSFUSED AND DIED.**

<table>
<thead>
<tr>
<th>Hosp. No.</th>
<th>No. of Trans.</th>
<th>Age</th>
<th>Mental Diagnosis</th>
<th>Duration Disease</th>
<th>Cause of Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>2670</td>
<td>2</td>
<td>40</td>
<td>Paresis</td>
<td>10 days</td>
<td>Exhaustion</td>
</tr>
<tr>
<td>2635</td>
<td>2</td>
<td>39</td>
<td>Exhaustive Psychosis</td>
<td>2 days</td>
<td>Exhaustion</td>
</tr>
<tr>
<td>1499</td>
<td>2</td>
<td>50</td>
<td>Dementia Precox (Catatonic.)</td>
<td>1 day.</td>
<td>Collapse.</td>
</tr>
<tr>
<td>1765A</td>
<td>2</td>
<td>45</td>
<td>Alcoholic insanity</td>
<td>1 day.</td>
<td>Collapse.</td>
</tr>
</tbody>
</table>

### TABLE IV.

**FEMALE CHOLERA PATIENTS WHO WERE TRANSFUSED AND DIED.**

<table>
<thead>
<tr>
<th>Hosp. No.</th>
<th>Age</th>
<th>Mental Diagnosis</th>
<th>Cause of Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>2652</td>
<td>50</td>
<td>Melancholia</td>
<td>Uremia.</td>
</tr>
<tr>
<td>2537</td>
<td>25</td>
<td>Manic Depressive Insanity (manic)?</td>
<td>Uremia.</td>
</tr>
<tr>
<td>2499</td>
<td>28</td>
<td>Manic Depressive (Depressive)?</td>
<td>Uremia.</td>
</tr>
</tbody>
</table>

### TABLE V.

**MALE CHOLERA PATIENTS WHO WERE NOT TRANSFUSED YET LIVED.**

<table>
<thead>
<tr>
<th>Hosp. No.</th>
<th>Age</th>
<th>Mental Diagnosis</th>
<th>Remarks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2625</td>
<td>30</td>
<td>Dementia Precox (Hebephrenic)</td>
<td>Private case.</td>
</tr>
<tr>
<td>2611</td>
<td>33</td>
<td>Epilepsy</td>
<td></td>
</tr>
<tr>
<td>2134</td>
<td>50</td>
<td>Paresis</td>
<td>Mild attack. Drank much water. Later died of dysentery.</td>
</tr>
<tr>
<td>2652</td>
<td>37</td>
<td>Paresis</td>
<td>Mild attack.</td>
</tr>
<tr>
<td>1437</td>
<td>40</td>
<td>Dementia Precox (Hebephrenic)</td>
<td></td>
</tr>
</tbody>
</table>

### TABLE VI.

**FEMALE CHOLERA PATIENTS WHO WERE NOT TRANSFUSED YET LIVED.**

<table>
<thead>
<tr>
<th>Hosp. No.</th>
<th>Age</th>
<th>Mental Diagnosis</th>
<th>Remarks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2311</td>
<td>20</td>
<td>Dementia Precox (Hebephrenic.)</td>
<td></td>
</tr>
</tbody>
</table>

### TABLE VII.

**MALE CHOLERA PATIENTS WHO WERE NOT TRANSFUSED AND DIED.**

<table>
<thead>
<tr>
<th>Hosp. No.</th>
<th>Age</th>
<th>Mental Diagnosis</th>
<th>Remarks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2123</td>
<td>23</td>
<td>Dementia Precox (Hebephrenic)</td>
<td>Was infused with saline solution.</td>
</tr>
<tr>
<td>1949</td>
<td>46</td>
<td>Paresis</td>
<td>Tuberculosis and dysentery.</td>
</tr>
<tr>
<td>1700</td>
<td>12</td>
<td>Idiot</td>
<td>Sprue.</td>
</tr>
<tr>
<td>2616</td>
<td>25</td>
<td>Dementia Precox (Hebephrenic)</td>
<td></td>
</tr>
<tr>
<td>2570</td>
<td>45</td>
<td>Invol. Melancholia</td>
<td></td>
</tr>
<tr>
<td>2129</td>
<td>40</td>
<td>Paresis</td>
<td>Tuberc. Arthritis.</td>
</tr>
<tr>
<td>1610</td>
<td>40</td>
<td>Dementia Precox (Hebephrenic)</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>40</td>
<td>Dementia Precox</td>
<td></td>
</tr>
</tbody>
</table>

### TABLE VIII.

**FEMALE CHOLERA PATIENTS WHO WERE NOT TRANSFUSED AND DIED.**

<table>
<thead>
<tr>
<th>Hosp. No.</th>
<th>Age</th>
<th>Mental Diagnosis</th>
<th>Remarks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>40</td>
<td>Manic Depressive Manic? Chronic.</td>
<td></td>
</tr>
<tr>
<td>2046</td>
<td>27</td>
<td>Dementia Precox (Hebephrenic)</td>
<td></td>
</tr>
<tr>
<td>1725</td>
<td>50</td>
<td>Senility</td>
<td></td>
</tr>
</tbody>
</table>
TABLE IX.
SUMMARY OF ALL CHOLERA CASES.

<table>
<thead>
<tr>
<th>Transfused</th>
<th>Recovered</th>
<th>Died</th>
<th>Total</th>
<th>Not Transfused</th>
<th>Recovered</th>
<th>Died</th>
<th>Total</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. W.</td>
<td>10</td>
<td>4</td>
<td>27</td>
<td>M. W.</td>
<td>10</td>
<td>4</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>M. W.</td>
<td>10</td>
<td>4</td>
<td>27</td>
<td>M. &amp; W.</td>
<td>17</td>
<td>5</td>
<td>22</td>
<td>44</td>
</tr>
</tbody>
</table>

Of the 27 patients who were transfused, 74% recovered and 26% died.

Of the 17 patients who were not transfused, 35% recovered and 65% died. Some of these non-transfused cases were purposely not transfused because of the mild nature of the attack.

Thus there were altogether 44 cholera patients under observation and 59% recovered and 41% died.

Of the men who were transfused and died one was an alcoholic forty-five years of age; one was a case of dementia precox, fifty years of age. In both these cases, death was caused by collapse. A second transfusion was given but was too late, the delay being caused by a severe typhoon and flooding of the compound. Another case suffered from exhaustive psychosis, was very weak, aged thirty-nine. He died of exhaustion without symptoms of uremia, fever, or collapse. Another case was in the last stages of general paresis, aged forty years. He lived for ten days. He had no signs of uremia, fever, or collapse.

Of the women who were transfused and died one was a case of melancholia, fifty years of age. She was transfused four times but died of uremia on the fifth day. One was a case of manic depressive insanity of the manic type. She was aged twenty-five years, received two transfusions and died of uremia on the fifth day. A third case with manic depressive insanity of the depressive type, aged 28 years, received two transfusions and died of uremia on the fourth day.

Shortly after the onset of the epidemic at the insane hospital, a number of cases were seen in various other parts of Canton. Notes on some of these cases may be of interest. On account of better facilities Rogers' line of treatment was followed with greater care. Especially valuable as an indicator was found the use of a blood pressure apparatus. If the pressure fell below 70mm. and the pulse became feeble, another injection of saline solution was indicated. If in spite of treatment the pressure continued below 95mm. and there was but little excretion of urine, a fatal prognosis was warranted.

Case 1.—Mr. P. L. Y., teacher, aged 25 years. Symptoms of cholera developed on Sunday night and by 2 a.m. severe diarrhea and vomiting had set in. Chinese remedies were administered until early
Tuesday morning. At that time the patient was seen. Pulse was not palpable at the wrist; there were severe cramps in the muscles of the legs and the patient was semi-conscious with a constant discharge from the bowels and mouth. About three pints of normal salt solution were given immediately in the right arm. The pulse became full and the cramps in the limbs entirely disappeared. About 9 a.m. two more pints were administered in the left arm, and a nurse was placed in charge of the patient. High enemas of normal saline solution were given every two to four hours. Potassium permanganate solution was given freely as a beverage (three to four grains to the pint of water). On Wednesday no urine was voided, but vomiting ceased and the stools became of firmer consistency, and of a greenish color (the result of the permanganate). Saline solution was given in a vein in the leg. On Thursday a few drops of urine were voided. Saline solution again given intravenously, but the blood pressure failed to be maintained. Cups were applied to the loins, but the patient gradually became uremic, another transfusion was without avail and death occurred early Friday morning.

Case 2.—Mr. N., aged 28, was brought to the Kung Ye Hospital five or six hours after the onset of diarrhea and vomiting. The pulse was very feeble but perceptible. Four pints of normal saline solution were injected intravenously. There was a very violent chill lasting over half an hour. Patient got up and walked out to his sedan chair thinking, apparently, that he was about to die. Permanganate solution was prescribed. The chill continued for some time after patient left the hospital. The next morning seen at his home the patient still had some diarrhea, there was no vomiting and the blood pressure was over 100. Rectal enemas prescribed. The last visit was made four days later. The stools were normal, there was free excretion of urine and the patient had a fair appetite.

Case 3.—Mr. C. K. W., aged 21 years, student at the Kung Ye Medical College. Patient had two loose stools following his mid-day meal. At 4 p.m. he vomited. He was first seen at 8 p.m. with persistent vomiting and but little prostration. Bismuth given by mouth. At 12:30 a.m. the vomiting persisted and there was a diarrhea with rice stools. The pulse was very feeble but palpable. Normal saline solution, two pints, was administered till there was much oppression in the chest. After half an hour, there was severe chill lasting for an hour. Permanganate solution given. Patient remained in the hospital four or five days. Uneventful recovery.
Case 4.—Mr. L. S. S., adult, age unknown. Attack began with nausea and vomiting at noon of September 27th. He was brought to the hospital at 10:30 p.m. quite pulseless. Saline solution was administered intravenously and later repeated. Death occurred three days later from uremia. This man had been forced by his companions to put his mouth to the water tap and the water was turned on. He was later found by his friends in a very much weakened condition. Symptoms of cholera developed soon after.

Case 5.—Mrs. K., aged 24. At 4 p.m. patient was taken ill with severe vomiting and diarrhea. She was brought to the Kung Ye Hospital the next day at 2 p.m., pulse very weak. Saline solution administered intravenously. Was not seen again but the patient was reported to have recovered three days later.

Several other cases were seen either in their homes or in the hospital. One was brought to the hospital in extremis. No treatment was given. Several cases were seen in their homes, cyanosed, extremities cold, pulse impalpable, and patient semi-conscious. All these cases died a few hours after they were seen.

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NOTES ON THE TREATMENT OF AMOEbic DYSENTERY WITH EMETINE HYDROCHLORIDE, FROM OBSERVATION OF SIXTY CASES.

ALEXANDER C. LAMBERT, M.D., C.M., Kiukiang.

An aftermath of the military operations conducted by the Chinese during the summer of 1913 in the vicinity of Kiukiang, Province of Kiangsi, was an outbreak of dysentery of amoebic origin.

The first cases made their appearance early in September, brought in from the various military camps in the neighbourhood. During October the epidemic reached its height, gradually declining throughout November. The number of cases treated privately at Kiukiang and in the wards of St. Vincent’s Hospital were probably but a small proportion of the total, because the troops who furnished the bulk of the cases were being moved continually from place to place, taking their sick with them.
Notes on the Treatment of Amoebic Dysentery.

In all fifty-four Chinese and six foreigners were treated, and every case recovered without any immediate complications.

The foreign cases were all, with one exception, seen within a day or two of the commencement of the attack, but many of the Chinese cases had been suffering from the disease for periods varying from a fortnight to two months before coming under treatment. It is to the credit of Roger’s treatment by hypodermic injections of emetine hydrochloride that the chronic as well as the acute cases recovered with equal promptitude, that no deaths occurred, and that relapses and sequelae so far have been practically absent from the series. Owing to pressure of work not every case could be examined microscopically, but a sufficient number of examinations were made to leave no doubt that the disease was amoebic and not bacillary dysentery.

A supply of emetine being on hand, the first case was treated immediately on admission with gr. \(\frac{3}{4}\), dissolved in 1 cc. normal saline. The patient testified to experiencing almost immediate relief from the griping and tenesmus from which he had suffered during the previous ten days. However, the disease not making such rapid disappearance as was expected, the dose was increased to gr. \(\frac{3}{2}\) twice daily, with the result that after six days the patient left the hospital cured.

With this first case as a guide those which came afterwards were subjected to a more energetic treatment from the start, the average daily dose given thereafter being grs. \(1\frac{3}{2}\), divided into three injections spread over the twenty-four hours, until the stools showed decided improvement which they did usually by the second day of treatment, after which the dose was gradually reduced. It was never found necessary to give more than grs. 2 during the twenty-four hours, and up to this amount no discomfort was complained of by the patient and no nausea nor vomiting occurred. In fact most cases did very well on a routine of grs. \(1\frac{3}{2}\) for the first three days, which was then reduced to gr. 1 for the next two days, afterwards being given in \(\frac{3}{2}\) or \(\frac{3}{4}\) gr. doses daily on each of the next three or four days. In more chronic cases, ten to twelve injections of gr. \(\frac{3}{2}\) were usually required to effect a cure.

The variety of the drug used was chiefly that supplied by Messrs. Burroughs and Wellcome in hypodermic tabloids and sterile vaporoles. Most of the cases in which the tabloids were used—as was also the case with a sample of the powdered drug obtained from Hankow—showed after a day or two at the point of needle puncture a small area of hyperemia and thickening, somewhat painful to the touch.
After two or three days this disappeared, and in no instance did anything in the nature of suppuration take place. These effects were certainly more marked when solutions were made up with normal saline; injections made with the contents of the "vaporoles" of Messrs. Burroughs and Wellcome showed only slight local reaction. Perhaps the use of a hypertonic saline solution in place of normal saline would prevent this slight annoyance to patients.

Treatment other than with emetine was hardly called for in most cases. Certainly no attempts were made to use rectal lavage of any description. A dose of castor oil or a saline aperient was found useful in clearing the bowels when given after the first few doses of emetine had reduced the amount of blood and mucus. The obstinate constipation so often seen to occur in convalescence from amoebic dysentery treated by older methods was complained of by none of the patients. Rest in bed and light diet were insisted on during treatment. Foreign cases were given citrated fresh milk until the stools became free from blood and mucus, at which point custard pudding, malted milk and farinaceous foods generally paved the way to a speedy return to normal diet. Chinese patients received congee and very well-cooked rice, or citrated milk if they could be induced to take it. The stomach, being at rest and freed from the ingestion of huge doses of powdered ipecacuanha and other abominations, was able to assimilate light foods, in fact one effect of emetine in dysentery seems to be to increase the appetite and digestive powers.

Amongst the foreigners treated were two infants, a boy aged 18 months and a girl aged 2½ years. A search amongst the literature of emetine, on hand, failed to afford any enlightenment on the treatment of such juveniles. The boy (whose mother had also a smart attack, quickly cured after five doses of emetine gr. ½) was treated at first with calomel and Dover's powder and, later, with Usara with but moderate success. As there was a tendency to relapses, emetine was tried tentatively in doses of gr. ⅛, gradually increased to gr. ¼, without any untoward symptoms being produced and to the ultimate cure of the disease. With this experience as a guide, the baby girl was treated from the commencement with gr. ⅛ twice daily, a cure resulting after ten injections. The disease seems to be proportionately more resistant to emetine when young children are the sufferers, but, on the other hand, children appear to bear well comparatively large doses of emetine. Both the above children were fed on citrated milk which they took with relish and in larger quantities than when in full health.
There is no doubt that thanks to the investigations of Rogers and Vedder, amoebic dysentery has been shorn of much of its danger, and the practitioner armed with a hypodermic syringe and a solution of emetine hydrochloride can now face with comparative equanimity an epidemic of this formerly dreaded disease. As to how much this treatment will be effective in reducing the after-incident of liver-abcess and bowel stricture, it is too soon, perhaps, for any definite statement to be made, but for the acute and chronic manifestations of the disease known as amoebic dysentery it certainly takes precedence over all hitherto tried remedies and is, so far as can be judged, a rapid and certain cure, only to be compared with the action of quinine in malaria. In addition to its therapeutic properties we have in emetine a diagnostic agent of considerable value, as pointed out by Rogers in a recent article in the *British Medical Journal* of November 8th, 1913.

He states in the course of his article on "The Rational Treatment of Chronic Bacillary Dysentery," that "we have a simple clinical test for excluding the amoebic variety in the use of emetine, for if 1-grain doses of this drug given hypodermically on three or four successive days has no effect on the disease, amoebic affection may be safely excluded and the case treated as one of chronic bacillary dysentery in the absence of signs or microscopical evidence of other rarer forms of lower bowel disease."

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**A SURGICAL PILGRIMAGE.**

**CHARLES KIRKLAND ROYS, M.D., Weihsien, Shantung.**

During a just-completed furlough the writer was privileged to circle the globe, and to see something of medical and surgical progress in Vienna, London, New York, Baltimore, Minneapolis and Rochester, Minnesota. In running over the notes taken during this period in various hospitals, medical and surgical congresses, etc., it occurred to me that they might prove interesting to other medical men in China. Of course, no subject can be treated exhaustively where so many are discussed; but if here and there a hint may be found useful, the writer will feel well repaid. A topical arrangement of these notes seems better than a chronological one. I would refer first to some developments in

**THE PREPARATION OF PATIENTS FOR OPERATION.**

We are most of us familiar with tincture of iodine for the sterilization of the skin. Its use has greatly simplified our operating-
room work. In Vienna I first saw it preceded by benzene, to remove oil or grease from the skin without leaving moisture to interfere with the action of the iodine. Iodine must be used with caution, however, in children, around the folds of the groin, scrotum, etc., or wherever it dries slowly, to prevent blisters. I heard Peck of New York lay emphasis on avoiding iodine contact with the peritoneum in laparotomy, as it causes a plastic peritonitis, and possible adhesions. He removes the iodine with alcohol along the line of the incision, and also clamps gauze pads to the edges of the skin wound. In the Mayo Clinic at Rochester patients are prepared for operation as follows: the day before operation, a bath and a shave; in the evening an ounce of castor oil and a wash over the site of operation with iodine dissolved in benzene, 1 to 1,000. Just before operation, with the patient on the table, wash with benzene, dry and wash with tincture of iodine. For the hands of the operator, the hot-water-and-alcohol method is used. Scrub 10 minutes with soap and water, and then soak in alcohol. Gloves are boiled with the instruments, kept in bichloride 1 to 1,000, and used wet.

ANESTHESIA.

The field of local anesthesia has been greatly enlarged by the use of novocain 0.5%. In one case in Vienna I saw 100 cc. of this solution given without adverse symptoms. I saw two double inguinal hernias, one femoral, a gastrostomy and a thyroidectomy all done under this kind of anesthesia. In the Mayo Clinic I saw the same solution used in operating on a woman of 54 with exophthalmic goitre. They also use it as a routine measure in the preliminary ligation of the superior thyroid arteries.

In the field of general anesthesia the most striking development seems to be in the use of various intra-nasal, pharyngeal, or tracheal insufflation apparatuses, which furnish a definite amount of ether vapor at a fixed temperature. The two former are particularly useful in operations around the head or face, and can be readily extemporized with the bulb of a cautery, some kind of a warming-chamber for the ether-vapor, and a couple of rubber catheters. The addition of essence of orange to the ether at the beginning of anesthesia seems to lessen its irritative effect. I wish to speak from personal experience of the value of warm, fresh nitrous oxide for short operations. A dentist who made his own gas gave me a whiff of it, and grubbed out three roots of a molar tooth without my feeling it, and with no after-effects whatever. The apparatus for making
the gas is simple and not expensive, and I hope to install it before long in my own hospital.

Spinal anesthesia seems to be generally discredited; but is still used by some men, who minimize bad effects by the combination of epinephrin with novocain or tropococain. Thus given, its chief drawback seems to be, not its danger, but the fact that it fails to produce anesthesia in about 5% of the cases.

THE PLATING OF FRACTURES.

Lane advocates the fixation of all fractures by steel plates screwed to the fragments with ordinary wood screws. If not even the gloved hands are allowed to touch the wound he considers that good results should be assured. I saw him do several of these operations at Guy’s Hospital; and certainly, with his multiplicity of instruments, none less that a foot long, and his elaborate aseptic precautions, the technique approached perfection. However, the general impression seemed to be that, while Lane’s methods are safe in Lane’s hands, yet plating should be reserved for fresh or un-infected compound fractures, and those simple fractures where reduction cannot be secured or maintained by non-operative methods.

In recent compound fractures, thorough iodine sterilization of the injured area, including the ends of the bone if these project, is considered to render the case fit for plating; but one should remember the dictum that the opening of the peritoneal cavity is a simple matter compared to this operation. In New York plates of heavy celluloid are used as well as steel. These have the advantage that they can be cut, and their screw-holes can be punched, to suit the exact conditions found.

At the meeting of the American Medical Association in Minneapolis, June 1913, Murphy advocated the use of carpenter’s finishing-nails (slender, with globular heads) in the fixation of the troublesome fractures about the elbow-joint. One of these, 10-penny size, inserted through a small skin incision and a hole drilled through either fractured condyle, will secure it to the shaft, and help to prevent the bad results so often seen in these cases.

THYROIDECTOMY.

No one can stay long at Rochester, and watch the Mayo brothers at work, without coming to believe in surgical treatment for selected cases of exophthalamic as well as simple goitre. It is the careful selection of cases as well as methods of treatment which characterizes the
work done at St. Mary's. Three methods are advocated; for the very severe, the injection of boiling water, to lessen the internal secretion of the gland; for moderately severe cases, the ligation of one or both superior thyroid arteries; for the milder cases, enucleation, generally of one-half of the gland.

The indications for each of preliminary methods are as follows:

A. Injection of boiling water. Either (1) marked enlargement or rapidity of the heart, or (2) Severe vomiting or diarrhoea, or (3) Extreme tremor or nervousness.

B. For ligation of the poles. (1) If the heart is dilated one inch to the left; (2) If severe vomiting or diarrhoea has occurred within two weeks; (3) If the patient is under 19, and hygienic measures have failed, do a ligation first. Its technique is as follows. First tie the left superior thyroid, under local anesthesia (novocain 0.5%), then after three days the right, and after a week if all goes well, enucleate. If a general anesthetic is used, precede by atropin gr. 1-150. The dissection is intra-capsular, the Mayos using blunt-pointed scissors, bent on the flat. In Vienna I saw this done with the Kocher dissector, a sort of tapering spatula with an eye in the tip by which a ligature can be drawn around any vascular strands of tissue.

Contra-indications for any operation are, large pulsating veins in the neck, jaundice, or myocardial degeneration.

SOME NOTES ON ABDOMINAL SURGERY.

At the Congress of North American Surgeons in New York, I saw demonstrated the Blake method for the radical cure of umbilical or post-operative hernia, by splitting the edges of the hernial opening, and over-lapping the flaps thus obtained. A large umbilical hernia had followed an operation for fibroids in a woman of 45. The sac was opened, adherent intestine and omentum cut free, and raw surfaces inverted or coated with sterile vaseline to prevent adhesions. The thin part of the sac was cut away, and the peritoneum with the transversalis fascia was separated from the posterior aspect of both recti muscles. These flaps were overlapped below the recti, thereby bringing broad surfaces into apposition, and markedly strengthening the resultant union.

The relation of the gall-bladder and appendix to chronic dyspepsia is an interesting topic. At Rochester I saw the abdomen opened repeatedly in cases which showed only the symptoms of chronic indigestion; yet in most of these either the gall-bladder
or the appendix was found affected. The reflex relationship between these two organs and the stomach is undoubtedly very close. The surgeon should be thoroughly familiar with the gross appearances of all these organs in their various morbid states, especially on account of the difficulty of making a differential diagnosis.

To the classical conditions to be looked for in the region of the caecum, must be added the "Lane kink," Jackson's veil," and dilatation or prolapse of the caecum itself. The "Lane kink" is an angulation of the ileum, with adhesions, within three inches of the ileo-caecal junction. In a case of this kind I saw Lane cut the ileum above this kink, and implant the cut end into the side of the sigmoid flexure, so as to short-circuit most of the large intestine. He follows this with daily doses of liquid petrolatum, and claims to relieve by this method a great variety of symptoms. In America the "Lane kink" was treated simply by the division of the adhesions, and the liquid petrolatum was applied in sterile form to the outside of the bowel (not inside), to prevent the reforming of adhesions.

"Jackson's veil" is a series of peritoneal bands across caecum and ascending colon, probably due to a late descent of the caecum in the foetus, and often associated with appendicitis. Its treatment is similar to that given above, viz., cut and prevent the re-forming of adhesions by inversion of raw surfaces, or the application of sterile vaseline.

An unduly movable or enlarged caecum is probably the result of intestinal stasis and gives various reflex symptoms, often referred to the stomach. The caecum may be movable simply because enlarged. I saw a case at Rochester in which, after the removal of the appendix, a longitudinal fold was produced in the caecum by suturing together the anterior and the external white longitudinal bands, for about four inches from the stump of the appendix.

What should we look for in the region of the gall-bladder? That organ should be dark blue in color, and uniformly soft; but if stones or thickened areas are felt, or enlarged glands along the ducts, the fundus should be opened and a thorough exploration made. Von Eiselsberg in Vienna does cholecystectomy for stones; the Mayos are satisfied to drain, splitting the peritoneum and dissecting out the mucous membrane if it shows thickened areas, signs of "strawberry inflammation," or a "sand-paper" feeling from cholesterin, as well as if there are evidences of malignant growth.
RADICAL CURE OF INTERNAL HEMORRHOIDS.

J. H. MONTGOMERY, M.D., Changpoo.

At our medical meetings and in our JOURNAL, I fear we are too ready to discuss and write about the rarer and more interesting cases met with in our work, and leave too much out of consideration the more ordinary and common ailments which, after all, do form the largest part of the medical and surgical work in our hospitals, and thereby I believe we often fail to gain valuable help from our colleagues, whose experience and advice might bring fresh light and help in these cases, whereby we might be materially aided in shortening the treatment, which is a very important matter in our frequently crowded hospitals.

I therefore would like to bring before your notice to-day, the particularly common disease of internal hemorrhoids and its treatment.

I do not propose to discuss the question of palliative treatment, but shall confine myself to the radical cure of this common and distressing condition.

When once it is decided to do a radical cure for these patients, we are then confronted with the problem as to whether we are to adopt the operation of (1) ligature or (2) clamp and cautery or (3) excision. For many years a battle royal has raged around this question, and each operation has its champion who advocates the operation he has had most experience with, and therefore considers the best. In recent years, however, the operation of excision has come more into favour, and by an extensive trial of this operation with the new technique now practised, the question appears now to be finally settled, and the consensus of opinion might at the present moment be fairly represented by saying: Do an excision in every case possible, leaving the clamp and cautery and ligature for the rarer and exceptional cases where excision is impossible, and where the parts are so soft and friable that stitches will not hold securely. In speaking of excision, I am not referring at all to the operation of excision of the whole pile-bearing area known as Whitehead's operation, as I do not wish to discuss these more severe forms of hemorrhoids, but it is worth noting that at home, since the adoption of the new method of excision, Whitehead's method is seldom necessary, and indeed some enthusiastic surgeons told me that, in the last few years, they have not met a single

*Paper read at the Annual Meeting of the Kuliang Branch of the C. M. M. A., August 1913.
Radical Cure of Internal Hemorrhoids.

Let me briefly describe the operation of excision as introduced by Mr. A. B. Mitchell of Belfast, and now known as Mitchell’s Operation. The patient having been prepared in the usual way and anesthetized, the mucous membrane of the bowel is washed with biniodide of Mercury solution (1:1000) and the sphincter well dilated. One of the piles is caught with a pair of forceps and pulled well down; a long narrow bladed forceps (Kocher’s artery forceps answer admirably) is then applied to the base of the pile in the long axis of the bowel, so as to include a vertical fold of mucous membrane one or two inches long. The pile having been pulled well into the grip of the forceps, the blades are clamped, and the projecting pile removed with scissors. A curved needle threaded with catgut is passed through the fold of mucous membrane, just above the forceps, and this catgut thread is firmly tied so as to include the artery running into the pile. The upper end being thus fixed the same needle and thread is used to form a continuous suture applied loosely around the blades of the forceps and including the mucous and submucous coats beneath the forceps. When the suturing is complete, the blades of the forceps are unclasped and withdrawn from the continuous suture which surrounded them; the suture is now rapidly tightened and secured at the lower end. Each pile is similarly dealt with and when the operation—which takes only from 15 to 20 minutes—is completed, four to six vertical lines of sutures remain within the rectum.

The operation is practically bloodless, and no attempt is made to secure subsequent inaction of the bowels.

The patient is up on the second day, and is well in a week or ten days.

The advantages claimed for this method I enumerate below:

1. A practically bloodless operation. This is most important, as the majority of cases suffer from anemia, the result of persistent hemorrhage.
2. A closed wound that readily heals, and no sloughing mass to be got rid of.
3. The ease and rapidity of the operation.
4. The absence of pain after the operation.
5. The rapid recovery, and the fact that the bowels may be allowed to act naturally.
6. The excellent after results, a recurrence of the trouble being exceedingly rare.

Various modifications of this operation have been introduced, but the above description is practically that given by Mr. Mitchell himself, when introducing the operation. There is, however, one modification that experience has taught me is of value, and that is the time at which the projecting pile should be cut off. Mr. Mitchell does that
before putting in any sutures, and I followed his method exactly, until on two occasions I had the misfortune to have the forceps slip their hold after the pile was excised, and of course there was a good deal of bleeding, till the edges of the wound were drawn together by stitches. To obviate that difficulty, after applying the forceps, and before cutting off the pile, I first introduce the suture above the forceps and tie that firmly thus securing the artery to the pile, then the pile is cut off, and the continuous suture applied around the forceps. By doing this first, should the forceps by any chance slip, the hemorrhage is controlled and no trouble arises.

After seeing this operation performed by Mr. Mitchell and other surgeons at home and following up some of the cases, I was so impressed with the ease of the operation and its excellent results, that on my return to China I at once adopted it and have used it with constant success during the last year, and although I have only done some 26 cases as yet, I feel convinced that it is the most easily performed and most satisfactory operation for the radical cure of internal hemorrhoids.

CHINESE AND ENGLISH.

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

In order to discuss intelligently the question of the language to be employed as the medium of instruction in our medical schools, we must begin with a clear idea of the object we have in mind and we must have a thorough knowledge of the conditions under which we are working.

We can never reach an agreement on this question, if we have different objects in view or if we have different conceptions of the circumstances under which we are working.

Most of us who have wrestled with this problem in the past have been on common ground as to the object in view. We wished to train doctors to go out and heal the sick, the lame, the blind; to help us in our hospitals and dispensaries to treat the thousands that crowd upon us; to show the Chinese by concrete, living illustrations that there was something better than their own doctors could give them in the way of medical science. In attempting to carry out this object, we have been hampered by such great difficulties that we have fallen far short of the standard of medical education that we had in our minds, but we have not shifted our ground in regard to the object in view.
China is an immense country and needs a large number of doctors and, in order to meet this need, we want to train a large number. If there is need of as great a proportion of doctors in China as in other countries, several hundred thousand will have to be supplied, and, even if our share comes to only a hundred thousand or fifty thousand, we still have a pretty big task before us. In case someone might consider this estimate too large, we will argue from the basis of the training of ten or twenty thousand doctors as the task set before our missionary medical schools.

Having stated the object in view, we now come to the question of the conditions under which we are to work. Are we to give this army of future workers their medical education in their own language or in a foreign language? It is a fact that cannot be contradicted, that a person acquires a knowledge of any subject more readily in his own than in a foreign language. I will even go further and say that, leaving out the picked men among our students, the rank and file will not only learn medicine less readily and less perfectly in a foreign language, but a good many of them will not be able to master the science of medicine in any satisfactory sense, unless it is taught in their own language. The average mind is not able to carry the double burden of thinking in a strange language and at the same time acquiring a science that is entirely new. Putting forth the mental effort required to extract the exact meaning from the foreign idiom leaves less brain power to give to the subject matter.

We are in great danger of overestimating the ability of an Oriental to acquire an occidental language, or vice versa. Our Chinese students often unconsciously deceive us, as well as themselves, in regard to their knowledge of English.

I remember a young man who studied English for six or seven years in a mission school and afterwards became a teacher of English in a government school. His knowledge of English was above the average, and he could talk in English intelligently on almost any topic. One day he surprised me by asking me if I could lend him a book in English, written in words of one syllable. He confessed that he could read the average book or newspaper only with the greatest difficulty. I mention this as one instance only. For years I have had intimate friends among the Chinese who have a good working knowledge of English for the purpose required, such as work in the customs, postal service, or telegraph service. The mental ability of most of them is above the average, and yet I do not believe there is one of them whose knowledge of English idiom is such as to enable him to read a medical
book intelligently. While I was studying in New York, I found the same thing to be true among some of the Chinese students who were taking a medical course there. Even some of them—who were able to pass their examinations—had gaps here and there in their medical knowledge caused by an occasional failure to grasp the English idiom, that made me feel that they would have made better doctors if they had studied medicine in their own language. Do we not find the same thing to be true in our own study of the Chinese language? Many of us have studied it faithfully and earnestly for ten, fifteen, twenty, or twenty-five years and can talk with a good deal of freedom on almost any topic, but how many of us can pick up a Chinese newspaper and read it with ease? It is often argued that the difficulty we have in learning Chinese constitutes a strong argument for the use of English in our medical schools. I would reply to this by saying that, in spite of the great difficulty of teaching medicine in Chinese, it is not to be compared with the difficulty experienced by our students in trying to study medicine in a foreign language. In teaching medicine in Chinese we have the foreign language difficulty to contend with, but we have the advantage of being familiar with the subject matter to be taught. Our students, when they study in English, not only have the foreign language difficulty, but also the difficulty of an entirely new and strange subject.

So far I have dwelt entirely on the greater ease with which a knowledge of medicine may be acquired by Chinese students when studying it in their own language, but I have not forgotten that the principal argument for English is based on the supposition that the student who has acquired his medical education through the medium of English, immediately has opened up to him a field of medical literature as wide as the English language itself. Again leaving out the picked men, my experience with the rank and file leads me to the unalterable conviction that the majority of them, after they have been dragged through a medical course taught in English and "boosted" up to the point of passing their examinations, will have gaps in their medical knowledge and still greater gaps in their knowledge of English. Then those who go into practice will soon be so overwhelmed with work that they will forget a greater part of their English, will have little or no use for the part they do remember, and will constantly regret that they did not study medicine in their own language so as to give their full mental strength to the subject matter.

Persistent attempts to learn English by medical students who have not the mental calibre to master it thoroughly not only dwarfs their
knowledge of medicine, but prevents them from learning their own language thoroughly. Deliver us from the "all English" Chinese who do not know their own language. The Chinese themselves have commented unfavorably on this state of affairs in some schools where a good deal of stress is laid on English, and especially where scientific subjects are taught in English, and they express contempt for the pupils who are adepts in English but poor in Chinese. Most of the graduates of our Mission high schools have had five or six years of English. Taking the full college course will add four more years to this. Now take the men of average ability from among these students (notice again carefully that I except the picked men) and see how far their six or ten years of English will take them into our medical textbooks written in English. The students who come from those schools where the different studies are well proportioned will find themselves unable to make any headway in English text books. Those who come from schools where English is heavily emphasized and Chinese is well nigh ignored may have better success, but they are paying a big price for it.

In most inland places, where Chinese influence prevails, the inability of a Chinese student or graduate to write a correct letter in Chinese is usually considered a reproach, but in some of the open ports, where foreign influence prevails, the "all English" Chinese sometimes boast that they cannot write a letter in their own language and consider this inability evidence of a superior knowledge of English.

I am well aware that there are men who claim from their own experience that the English-taught Chinese doctors far surpass those who are taught in Chinese. I think there are two explanations of this fact. One is that the English-taught men are picked men, and it is hardly fair to compare them with men of medium ability. The other is that, in the past, those who have studied medicine in Chinese have been tremendously handicapped by the utterly inadequate facilities for acquiring a medical education in Chinese. In the past, the English-taught man has had the advantage in every way. Is it not high time for us to remove the handicap of the Chinese-taught men, by manning and equipping our medical schools more adequately, and by giving the Chinese more text books in their own language? This has long been one of the avowed objects of our Medical Association, but lately this seems to have been lost sight of in the mad chase of the will o' the wisp of doing all our medical teaching in English. It certainly seems to be time to call a halt, when the statement is made that it is impossible at present to give a truly scientific medical
education in Chinese. May I ask why several hundred medical missionaries with trained minds and a good knowledge of medicine are supposed to find the Chinese language such a tremendously difficult task that they simply fall down flat before it and go to teaching in English, while thousands of partly trained Chinese students are supposed to have such superior ability as to master the intricacies of medical science in a language that they have had far less opportunity of acquiring thoroughly, than the average missionary has of learning Chinese?

If the teaching of medicine were all didactic, the language difficulty would be much more serious, but the fact that the didactic teaching is largely reduplicated by the clinical and laboratory teaching, goes very far towards eliminating the difficulty.

Then we are told that we ought to teach in English, because it seems likely that the Chinese government medical schools will do so. We might reply that their doing so constitutes a good reason for our not doing so, because it leaves us in the field of teaching in Chinese without a competitor.

I am confident that, by teaching our picked men in English, and the rank and file in Chinese, we will attain a better average medical standard than we would by doing all our teaching in English.

The question of English as an entrance requirement of our medical schools is very different from the question of using English as the medium of instruction. The learning of a foreign language has a distinct value in educating and training the mind, when it is not pushed to the extent of crowding out everything else; and some knowledge of English is a decided advantage to a medical student, even when all his class work is done in Chinese.

So far very little has been said about the picked men. Want of time has not allowed us to give their case as full consideration as it deserves. The cause of medical missions in China urgently needs English-taught doctors both to translate medical books and to act as professors in our medical schools.

Such work requires men of superior ability, and we want to see medical schools established where only such men are admitted, but the aims and influence of these schools should be such as to make it possible to secure a large proportion of the graduates for the above-mentioned purposes.

The need of such men is urgent, but should not blind us to the more urgent need for men who have received their training in the Chinese language.
There is another point that has not been sufficiently considered. By the medical teaching we have already done in Chinese, we have started a movement that is not going to stop. It is plainly our duty to stay with this movement and help it and constantly seek to raise it to a higher standard. If we desert it at this critical time and do no more teaching in Chinese, it will be taken up by the men we have educated in the past, who fall far short of the standard for which we stand, and which we hope soon to attain in our medical schools.

The English-taught men will not do this medical teaching in Chinese, or if they do it, it will be as divided and scattered units without any organization. Besides, any teaching done by them in Chinese will necessarily be of an inferior quality because of their ignorance of Chinese medical terms.

Whatever may be our failings, and they are many, we are the only organized body that is making any serious effort on a large scale to give the science of medicine to the Chinese in their own language. If we ignominiously desert such a worthy cause, the finger of scorn will be pointed at us by those who know the facts. If we should leave this work to half-trained men, "Western medicine," instead of being held in high esteem in China, would be in danger of becoming a laughing-stock and a reproach.

To sum up, the work of teaching medicine in the Chinese language is a big work, an important work, a necessary work, a difficult work. We cannot entirely substitute for it the teaching of medicine in English, though we can make the two supplement each other. If we neglect entirely the teaching of medicine in Chinese, it will be done by others far less well equipped to do it than we are.

It seems to me that our Association should stand for the establishment of separate schools for the teaching of medicine in Chinese and in English, so that both classes of students may be able to do their best work. It might be mentioned that, while we are not at all blind to the deficiency in scientific knowledge of many of the men we have educated in the past, their failure to "make good" has in a large number of cases been due to a break down in character rather than to a lack of scientific knowledge. It is too often the case that, "When money knocks at the door, pure science flies out of the window." Failures of this kind should not be attributed to the use of the Chinese language.

It is very much hoped that we, as an Association, can reach something like unanimity on this important question. Our work will be weakened and made ineffectual by dividing into hostile camps and by
A CASE OF HYDROPHOBIA DEVELOPING MORE THAN NINE MONTHS AFTER A DOG BITE ON THE FACE.

O. T. Logan, M.D., Changteh, Hunan.

During the month of January 1914, there came into our hospital one evening a young boatman who complained of difficulty in swallowing. There was nothing unusual about his appearance except the rather "wild" look in his eyes caused by widely dilated pupils. There was a scar on his lip that he said was inflicted more than nine months before by a dog that was supposed to be mad.

Thinking that he might have been only frightened by his friends, I gave him a hypodermic of morphine sulphate, gr. 1-2 and waited to see whether it would have any effect. As it did not, I decided to give him an intravenous injection of a quinine salt, having read in a recent number of the Journal of the American Medical Association (October 25th, 1913, p. 1513) of an apparent cure by the repeated injections of quinin and urea hydrochloride, intravenously given. I had none of the latter drug, so the hydrobromide of quinine was used. After receiving the injection of 15 grains, the patient went to his boat. The next day Dr. Tai called to see the result and found the man unconscious, tied down, and apparently not far from death.

I have seen but two cases of this awful disease. In the first case the sphincters of the rectum and bladder were affected before the throat muscles were involved. In this case, the sphincters were subjectively normal after the spasms of the throat had become well established.
REPORT ON SANITATION AT CANTON CHRISTIAN COLLEGE.

ANDREW H. WOODS, M.D., Canton.

REVIEW OF PERIOD 1905-1911.

In 1905 it became necessary for the Canton Christian College to move from Macau with only six weeks' leeway for preparation of shelter and grounds at Honglok (just east of Canton). The recently purchased grounds consisted of a sixty-foot hill, a forty-foot hill, and grounds sloping irregularly from them. Most of the campus lay on the half mile slope northward to the Pearl River. Paddy fields in the northwest corner were at once drained, the green rice-crop cut, and wooden bungalows erected. Within six weeks after breaking the dyke of the rice-fields, the whole school, including foreign and Chinese staff, was sheltered in two rambling bungalows.

Air, sunshine, exercise, and food were of the best. Rainwater was caught and stored in earthen vessels. For the first months, the health of students and teachers was excellent. Insulated by the broad river from the endemic and epidemic plagues of Canton, contagious diseases became, and have continued, rare. But, after a few months, malarial fever started among the students. Anopheles mosquitoes had been observed from the beginning. Although the San Fung Wong village, with constant malaria, was only 100 yards from the bungalows, the mosquitoes that bit persons in the College appeared to have not yet themselves become infected from malarious villagers. When the infection once started, however, it spread rapidly, patients infecting mosquitoes, and mosquitoes infecting new patients. Paddy fields and ponds were at the very doors of the bungalows, and the generation of anopheles mosquitoes seemed beyond control.

The situation was serious. The possibility of continuing the College seemed doubtful. Foreign teachers suffered most; some of them becoming rapidly anemic and their parasites resistant to quinine. No malignant cases occurred, all being of the mild tertian type, with many mixed cases showing daily paroxysms. Some Chinese patients were careless or refused treatment. Such patients untreated suffered a few days, then appeared to get well, though when observed for months chronic poisoning and depleted health resulted.

The campaign at once begun consisted in compulsory quinine treatment, 1.00 gm. to 2.00 gm. in 24 hours; screening windows and doors; drainage of breeding grounds owned by the College, and the
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rapid acquirement of adjacent grounds with a view to drainage. The trustees and American staff co-operate in this effort. But the outlay of money and time was great. The work was evidently inadequate, and the disease increased in prevalence.

During 1911 and 1912 the College physician reported among the 400 students thirty new cases per month. Some American members of the staff had in the meantime become chronically infected, were resistant to quinine, and even after a year in America were still having repeated paroxysms. At this juncture a far-seeing friend of the College gave a fund of $10,000 (gold) to the trustees to be used in sanitary engineering.

MAKING HONGLOK THE HEALTHIEST PLACE IN CHINA.

The subtropical climate of South China is salubrious and enjoyable. Without the strain of severe winter cold, and with summer temperature rarely high and always tempered by ocean breezes, life of man, beast, and plant is easily maintained. Barring certain avoidable accidents, physical vigor is more easily preserved in Canton than in severer northern latitudes. The elimination of those accidents is largely a mechanical task, and this constitutes the sanitary problem of the College. Being separated from the crowds of Canton by a broad river, and having complete control of its 100 acres enclosure, the Canton Christian College expects in the near future to offer ideal health conditions.

The sanitary problems of the College consist in:

1. Providing exercise grounds (tennis, football, baseball, etc.), systematic drill, and athletic exercises for students, well ventilated sleeping quarters for students and workmen. Most of the teachers and all students are now well housed. Much remains to be done for junior staff members with families, and especially for watchmen and workmen. The College village aims to supply neat homes at $500 (gold) each with garden space, good water, and modern bathrooms. Two such model cottages are now ready for occupancy; others will be built in the near future as funds are available.

2. Securing proper food and water. Rainwater is now the chief reliance for drinking and cooking but is insufficient for students’ use. An artesian well has been sunk to a depth of 400 feet. River water is filtered and pumped to all buildings for bathing, etc. A dairy has been operated as a private enterprise for a year. At present the milk supply is costly and is insufficient in quantity. The Agricultural Department provides a few vegetables, and may be able to develop an adequate supply at reasonable cost so as to supply students as well as teachers. Meat, fruits, and most vegetables are bought in the city. Artificial ice is cheap and abundant in Canton.

3. Sewage-disposal and surface-water drainage.

4. Prevention of insect breeding and protection against their bites.

5. Prevention and treatment of parasitic diseases brought in by contaminated vegetables, milk, and other foods and drinks.
6. Detecting and eliminating infectious diseases brought in by things and persons, coming from the city and villages. A varied assortment of infectious diseases is constantly at hand: smallpox, bubonic plague, leprosy, tuberculosis, scarlet fever, diphtheria, etc.

7. Quarantine and treatment of such diseases occurring on the grounds.

WORK DONE IN 1912-13.

Regulations enforced by the College physician and the faculties of the various departments suffice for some of the above requirements. The Agricultural Department will give increasing help in providing food and milk, and in sewage disposal. The engineering problems involved in water supply, drainage, sewage disposal, and house construction (to exclude dampness and insect pests), are more difficult and costly.

WATER SUPPLY.

Artesian Well.—At a convenient site, forty feet above the river, a six-inch artesian well has been drilled. Water of good quality was struck at a depth of 180 feet. The well was then continued to a depth of 200 feet to secure a sufficient quantity. As coolies had to be trained to carry out every step, a long time has been consumed in the execution of this work. Having trained a corps of workmen, other wells can be drilled by them here or elsewhere in South China. The test of the dry seasons of 1913 and 1914 will give accurate information as to quantity of water in the vein now struck. It will be a boon to the whole of South China if the test demonstrates the adequacy in quantity and quality of subterranean streams.

Cisterns.—Large concrete cisterns have been constructed for each residence and for one dormitory. Sealed against ground water, these reservoirs furnish safe water of the highest potability, and of perfect “softness.” The one obstacle to reliance upon cisterns as the sole supply of “clean water” is the enormous size required to store a sufficient quantity throughout the four or five rainless months.

River-water.—The river brings a limitless quantity of water to a convenient point within the campus, and to a level only sixty feet below the site of the highest building. It is used to supply “rough water” for agriculture, for laundering and scrubbing, and for flushing water-closets. It is filtered through a three-foot sand bed, and pumped by a three-horse-power kerosene motor through a three-inch main to all parts of the campus. For the 400 consumers at present a daily quantity of 9,000 gallons, or 22½ gallons per capita, is pumped.
DISPOSAL OF SURFACE WATER, KITCHEN SLOPS, AND SEWAGE.

The campus slopes away to the Pearl River and a canal on the north, through a long cultivated valley to a stream on the west. A similar valley receives the drains on the south, the water passing through tideswept streams to the main "reach" of the river at the southern boundary of Honam Island. The valleys on the east carry surface water to the Pearl River. The highest part of the campus is sixty-nine feet above low tide.

All surface water is caught in terra-cotta drains from the roadside gutters. Flat surfaces of the campus are filled and tilted sufficiently to throw water to peripheral drains. Damp spots are being specially underdrained. Agricultural drains as deep as the lowest foundation-levels are being placed around buildings from which surface slopes will not properly carry ground-water.

Kitchen slops are filtered into house drains, the fluids running into the above described system to the river, while the filtrate is carried by coolies to the Agricultural Department where it is covered with earth and rotted for fertilizer.

Septic Sewage.—Bath rooms of residences and dormitories are equipped with flush-closets which measure three to five gallons of "rough water" to each flush. Iron soil-pipes conduct this through series of traps to the foundations, where terra-cotta pipes receive and carry it to conveniently placed septic-tanks. These are so built that no odor can escape. Bacterial action in two chambers reduces the contents to clear solution of basal salts and carbon dioxide gas. The fluid outflow is conducted to the fields and there dug under.

PREVENTION OF INSECT-BREEDING.

The presence of cultivated fields, included within College grounds but owned by farmers, made thorough drainage of pools and swamps impossible. Through Mr. Laird's efforts, many of these tracts have been bought. Many acres of graves not owned by the College also lie within its boundaries. The owners of these permit us to dig shallow "runs" to carry stagnant water away. Lying around the entire campus are hundreds of acres of paddy-field which are beyond our control. The Trustees adopted the far-seeing policy of buying as rapidly as possible enough of this land to form a girdle of 200 yards width around the dwelling, and dormitory sections. Experience in individual dwellings showed that by freeing the premises for even a hundred feet in all directions of breeding places (such as flower-pots, sodpools, broken-vessels, and deformed rain-leaders) a marked decrease
in mosquitoes followed. Hence in 1912 and 1913 a beginning was made by buying all available land within 200 feet of existing buildings, and thoroughly draining it. Mr. Knipp, resident engineer, has been in charge of all drainage and levelling, and has constructed the sewage-system Buffalo-cow wallows, mushy soil holding foot-prints, and all ponds are kept dry. Constant vigilance is required to secure and maintain this condition, since the Chinese workmen used do not take in its significance and so do not intelligently carry out the plans. With experience a few are becoming useful in this work, and will be kept constantly on the lookout for breeding-places. The whole work cannot be quickly accomplished owing to these difficulties, but within two years from now it is hoped that the campus with its 200 yard girdle will be exempt from mosquito larvae. This wide girdle will be used for recreation grounds, various forms of agriculture, and for buildings that are unoccupied at night.

Flies have been responsible for intestinal infections to a considerable extent. For several years past, large numbers of native workmen have been quartered in sheds near the several buildings on which they were engaged. Open latrines were used, and often carelessly cleansed. Three cases of typhoid fever and many of dysentery occurred among students and servants. Flies increased until the students' dining-hall became unendurable at meal hours. To remedy the condition, the dining-hall was screened with fine wire gauze, and workmen's latrines are being built with modern flush-closets. All open latrines are now forbidden, and manure piles at cow and horse-stables must be screened, or removed and earth-covered daily.

**Screening of Houses.**—Prevention of the breeding of mosquitoes and flies will be only partially successful until all inlying tracts owned by Chinese farmers can be controlled. Since all such insects cannot be eliminated, the remaining ones are being kept from biting human beings by thorough screening of houses. No. 18 mesh bronze gauze screens have been placed in residences, in most rooms occupied by teachers, and to some extent in students' dormitories. As rapidly as students and workmen can be educated to keep the screens closed and in good repair, this work will be pushed until all sleeping quarters, dining rooms, and recitation halls have been protected.

**RESULTS.**

A distinct diminution in the number of mosquitoes followed the grading operations. A simultaneous decrease in the incidence of malaria is noted. During the fall of 1912 the physician's report showed
thirty cases per month among 400 students. From February till November 1913 the cases have not averaged 10 per month, the highest being 22 in one month. While it is too early to forecast future statistics, the out-look for the complete extermination of malaria on the College grounds (excepting imported cases) is good.

Much must still be done to prevent fly-breeding and consequent intestinal diseases. The regulation against open latrines and exposed manure is being stringently enforced. If necessary, all agricultural work incompatible with these regulations will be placed beyond the 200 yard girdle. The educational effort among the students has given encouraging results in regular eating habits and improved quality of food. A committee of students in charge of the Dining Hall has held meetings for discussion, and speakers have been invited by them to address the student body on proper food and cooking. The students have undertaken to regulate the sale of eatables on the campus, and an intelligent spirit is being developed among students as to over-eating and irregular eating. Chinese teachers and students are seriously studying the difficult problem of selection and cooking of food—a task involving training of palate and greater outlay of money.

Quarantine has stopped incipient out-breaks of mumps, measles, Roetheln, and chicken-pox. These quarantine and general hygienic regulations have a far-reaching educational value for the students and their families. The good results are apparent and constitute better argument than months of didactic explanation for adopting the methods in Chinese cities and villages.
Two Cases of Nervous Disease.

TWO CASES OF NERVOUS DISEASE.


ALFRED C. REED, the Changsha Yale Hospital, Changsha.

To many physicians in Oriental practice, the crowding routine of the day brings small opportunity for familiarity with contemporary medical and scientific progress, and scarcely seems to allow time or energy for retaining the knowledge of certain branches of medical science with which formerly they may have been conversant. There is an insidious and oftentimes quite unrecognized temptation to meet only the temporarily urgent duties, a temptation to relax the minutize of close observation and thorough examination of each case, to stop making exact diagnoses, to stop trying to construct a logical idea of the pathology of each case, to stop seeking a genuine etiology. It is a temptation to treat the symptoms and not the patient. In short, it is a temptation to surrender to the benumbing influence of routine and the deadening pressure of the insistent demand to exceed the optimum working capacity.

The masters of medicine of a generation ago showed the possibilities of clinical observation, making of it almost a science in itself. Certainly, as James Mackenzie has so forcefully reiterated, correct clinical observation is as valuable as it is rare. When the man in general practice has had his eyes opened to the possibilities of the routine which has enslaved him, he may make of it a servant bringing to him a constant succession of new and engrossing subjects, and he can no longer stay in the rut of his old routine because he will no longer find two cases just parallel, or similar in pathology or indicating the same therapeutic practices. The cases here presented offer no new features in symptomatology, no difficulty in diagnosis, nor were they the objects of any unusual degree of study or observation. They are reported as concrete examples on which to hang a brief review of two affections of the nervous system which are, apparently, as common in China as in the western world.

CHARCOT'S DISEASE,—AMYOTROPHIC LATERAL SCLEROSIS.

The patient, an unmarried Chinese girl of 17 years, was admitted to the Yale Hospital on February 5th, 1914. Her father had died of mania, while her mother and one brother were alive and in good health. No further history of mental or nervous disease in the family was obtainable. Menstruation began at the age of 12 and was always
irregular, scanty and painful, sometimes appearing only at intervals of several months. Her general health was fair. No other diseases occurred until the beginning of the present condition three years ago.

No reliable account could be gotten of the anamnesis or development of the disease. Upon admission to the hospital, the patient appeared indisposed to answer questions and was unable to walk owing to stiffness and weakness of the lower extremities.

Physical examination showed an under-sized, poorly developed girl with marked spinal deformity and paralysis of both upper and lower extremities. The head was held rigidly flexed. The mucous membranes were pale; the mouth and throat normal. The neck was small and showed general muscular atrophy. Respiration was difficult, of the abdominal type and the ribs were fairly well fixed. The chest was of the pigeon-breast type with greatly increased antero-posterior diameter. Dullness began at the second interspace on both sides and extended down to the pulmonary limits. Both lungs were filled with large and small moist rales. The apex beat was apparent and palpable in the fourth interspace three inches to the left of the median line. The cardiac sounds and rhythm were normal. The abdomen was markedly distended and tympanitic, but soft and flexible. Neither liver nor spleen were enlarged, nor were rigidity, tenderness or masses present at any point.

The head and face were well-nourished and of normal size, but the trunk and limbs showed well-marked atrophy. Speech was retarded, slow and difficult. Enunciation was very imperfect. There was some paralysis of the muscles of the palate and some interference with deglutition. The pupils reacted normally during accommodation, but with extreme sluggishness to light. The consensual reflex likewise was very sluggish. The upper extremities presented a well-advanced picture of progressive muscular atrophy of the Aran-Duchenne type. The thenar, hypothenar and interosseous muscles of both hands were atrophied, as were also the muscles of the shoulder girdle, particularly the deltoid and, to some extent, the biceps, triceps and muscles of the forearms. These lesions were practically symmetrical. Voluntary motion of the arms was possible but very limited and slow, and the muscular strength was proportional to the atrophy. All tendon reflexes were notably increased in the extremities but not so in the muscles of the trunk and face.

The spine was twisted in two places, causing considerable deformity of the chest and trunk. A marked kink was to be seen in the lumbar vertebrae and a rotary-lateral displacement of the upper
Charcot's Disease.

Cervical deformity and spastic paralysis of legs, with atrophy.
lumbar and lower four dorsal vertebrae. There was also an old lesion of the third and fourth cervical vertebrae with marked displacement of the head and upper neck forward into the attitude of dislocation. The neck and spine throughout were immobile from bony ankylosis. The muscles of the neck, especially the thyro-hyo-sternal group, the sterno-mastoid and the trapezius, showed extreme atrophy.

The control of the sphincters was normal and the general atrophic condition of the body was excellent. No sensory phenomena were present, and at no time did the patient suffer pain. Ankle clonus was present and Kernig’s sign and the Babinski reflex were strongly positive. Patellar reflexes were greatly exaggerated. There was typical spastic paraplegia of the lower limbs. With the assistance of two nurses the patient could walk very slowly, though she was not able to support her weight alone. The gait was of an exaggerated spastic type, the feet seeming to cling to the floor. Adductor spasm was noticeably present. Examination of the urine and blood showed no abnormality. There was present a moderate ascari infection.

The diagnosis of amyotrophic lateral sclerosis rests in this case on the presence of a spastic paraplegia, due to sclerosis of the lateral motor tracts of the cord; a progressive muscular atrophy, of the upper extremities and shoulder girdles, due to a lesion of the motor tracts and anterior horn cells of the cervical enlargement of the spinal cord; and a beginning bulbar paralysis, due to involvement of the motor nuclei of the medulla and brain stem. The diagnosis is confirmed by the association with these positive phenomena of an absence of trophic, sphincteric and sensory affections, the clinical picture in its entirety making up a characteristic syndrome which cannot be confused with any other disease. Primary diagnosis of Charcot’s disease may often be difficult, especially in the earlier periods, when a spastic paraplegia, an Aran-Duchenne muscular atrophy or an extending bulbar paralysis may engage the full attention and indeed not rarely represent the entire progress of the disease to date. But sooner or later, the extension to further units of the motor tracts and the continued absence of trophic, sensory and sphincteric concomitants will clarify and correct the diagnosis.

In the case presented, the condition of lateral sclerosis is established by the characteristic Babinski and Kernig signs, the exaggerated knee jerk and ankle clonus, together with the characteristic stiff gait and adductor tension. The wasting and weakness of the shoulders and small muscles of the hands with a corresponding decrease in muscular power, show the motor lesions of the cervical cord. Indications of the
destructive process having reached the medullary motor centres are found in the disturbed function of deglutition, the retardation of speech, indistinct and difficult articulation, and the slow protrusion of the tongue. The presence of an ocular reaction suggestive of an Argyll-Robertson pupil, is of doubtful import. The light reflex was present, but exceedingly slow. A true Argyll-Robertson pupil has been reported in isolated cases of amyotrophic lateral sclerosis. The general hyper-irritability of both the tendon and muscle reflexes is quite characteristic of Charcot's disease.

Calling to mind the essential pathology of this disease, we find at once a satisfactory explanation for the sharply defined and progressive symptom complex. The lesions consist of an extending atrophy of the motor cells of the anterior horns of the cord, an atrophy which may be limited to the cervical and lumbar enlargements or may also involve the cord throughout. This atrophy extends upward as the disease progresses until all the upper motor neurones may be affected, even to the nuclei of the cranial nerves, and the motor centres of the medulla, pons, crus, internal capsule and even to the cerebral cortex, where areas about the fissure of Rolande may show atrophy of the motor neurones.

The prognosis, as viewed from clinical experience and from the pathology, is hopeless. Death follows some intercurrent affection or waits upon the development of serious bulbar lesions. Treatment can only be symptomatic and supportive. The lack of trophic disorders and urinary or fecal incontinence relieves the nursing of much hardship.

So serious a disease, and one with so hopeless an outlook, deserves particular study of methods of prophylaxis. But, unfortunately, ignorance of the exact etiology nullifies our efforts in this direction. Trauma, various infections and poisons have been considered in a causative relation. The origin of the disease may well be ascribed to an exciting factor of varying sort acting upon a nervous system subject congenitally to an abnormal state of equilibrium and from ante-natal influences predisposed to react in a pathological manner to these stimuli. In the case presented, several facts support this view. These are, the absence of many of the commonly stated causes, the definite history of mental disease in the father of the patient, and the age of the patient. This latter point rather indicates an hereditary basis for the development of the disease, in the absence of any other definitely discoverable cause. It is unusual to find amyotrophic lateral sclerosis beginning at an age earlier than 30. If this Chinese girl noticed definite symptoms of the
Two Cases of Nervous Disease.

disease at the age of fourteen, it is safe to say that the condition must have existed for from three months to a year previously. This is the earliest age noted in the literature to which I have access. Spiller records one case at the age of 19. Its excessive rarity under 25 years is mentioned frequently. The case here reported, beginning certainly at the age of 14 and most probably at the age of 13, is therefore of unique interest. Judging from the fact that nervous diseases in the Chinese seem to have a relative incidence, course, and symptomatology parallel to the same diseases in western countries, the strong probability of an hereditary basis in this case would seem markedly to strengthen the argument for an hereditary basis for the same disease in the Occident.

Another factor in this case having a possible bearing on the etiology, was the presence of old Pott's disease of the cervical and lumbo-dorsal vertebrae. These regions of the spine had undergone complete anchylosis. Tuberculous foci were present in the lungs. Tuberculosis probably could not be assigned a definite role etiologically because it is perhaps the commonest disease among the Chinese, the whole race being permeated with the infection, and yet amyotrophic lateral sclerosis is at least of rare occurrence. The lesion of the third and fourth vertebrae in the case here presented, was so severe as to cause a practical displacement of the articulation and a posture characteristic of cervical dislocation. With this, however, the cord apparently suffered no damage directly as myelitic symptoms did not appear. It is conceivable but not demonstrable that the tuberculous spiral disease lay at the origin of the motor tract disease and furnished an immediate existing factor which, acting on a nervous system hereditarily predisposed, resulted in amyotrophic lateral sclerosis. There is no ground for holding that the tuberculosis would have had any selective affinity for the motor neurones, but a hyper-susceptibility of these neurones might have determined the reception in them of the maximum damage from the infection. The essential cause seems thus still to lie with the inheritance by the patient of a more or less indefinite lack of stable equilibrium of the motor neurones of the cord, brain-stem, and cortex.

There was a peculiar relationship between the pulse curve and the temperature curve. A slight rise of temperature was accompanied by a more pronounced fall in pulse rate and vice versa. On February 27th, for instance, a fall in temperature from 37 degrees to 36 degrees was accompanied by a rise in pulse rate from 95 to 135, and the succeeding return of the temperature curve to normal was coincident with a fall in pulse rate from 135 to 82. This curious
phenomenon may have represented a disorder in the paths of communication between the heat-regulatory centres in the corpus striatum and the cardiac centres, or it may have been due to an involvement of the tenth nerve in the general motor tract disease, with a consequent occasional and irregular loss of normal inhibitory control over the heart. In the latter case the phenomenon may have been precipitated by an otherwise insignificant fall in temperature, or both may have had a more remote reason.

The patient left the hospital on February 27th, with the disease slowly advancing. Her vegetative functions were in excellent condition but the bulbar paralysis was perceptibly gaining ground.

PARALYSIS OF NERVE XI, WITH INVOLVEMENT OF NERVES X AND XII.

The patient, a Chinese man of 36 years, was admitted to the Hunan Red Cross Hospital on January 15th, 1914. He had been married, his wife dying from pulmonary tuberculosis one month after marriage. He had no brothers, sisters, or children. His father died at the age of 76 after an attack of indigestion with repeated vomiting, previous to which he had always enjoyed excellent health. The patient's mother died at the age of 43 from pulmonary tuberculosis. His father had five brothers, all of whom died before him from pulmonary tuberculosis.

The patient had always enjoyed the best of health until the origin of the condition for which he sought hospital relief. He began to smoke opium at the age of 26, for amusement, as did many of his friends. For six years he smoked an average of 5 grams daily, but did not take the drug in any other fashion, nor did he use morphine. After six years' use he was partially relieved of the habit under the treatment of a government physician in Changsha.

From two to four years ago, the patient did a great deal of writing in his employment as a police clerk, averaging as much as three thousand characters a day. From this period he dates the origin of the disability in his neck which brought him to the hospital. He first noted nearly four years ago weakness of his neck with inability to hold his head up. He was absolutely certain on repeated questioning (and he was a man of above the average intelligence) that during and preceding the development of the first symptoms, he suffered not the slightest pain, fever, nausea, indigestion, or other phenomenon which could have been of prodromal significance. The condition remained
stationary for two years, with difficulty in holding the head erect and facing forward, but without pain or any affection of deglutition, articulation or mental function.

Two years after the onset, the patient began to experience indigestion with extreme eructation, flatulence, constipation, and anorexia, but not pain. The constipation was varied with occasional periods of diarrhea. At the same time his visual acuity noticeably diminished and he became breathless on slight exertion. He denied all venereal infection and gave no history suggestive of it. On admission, his complaints were weakness of the neck, abdominal distention and flatulence, and cold extremities.

Physical examination showed the man to be well nourished, with soft, elastic, moist, well-padded skin, and, in general appearance, rather under his actual age. No ocular or facial paralysis was present. The pupils reacted sluggishly to light and on accommodation, and the tongue deviated to the right, with a marked tremor of the right half and tip. The teeth were in poor condition. The head was subject to a side-to-side slow oscillation, about five to eight vibrations per second. He could not maintain the head upright more than a few seconds at a time, as the chin tended to fall and rotate toward the right shoulder. Efforts at voluntary control increased the amplitude and rate of the tremor. The patient supported his head with his hand, which also relieved the tremor to a considerable degree. The examining hand laid on the head diminished the tremor to a like extent. The skin, creases, and general appearance of the neck were symmetrical except for a marked atrophy of the right sterno-mastoid. The right trapezius was apparently normal. No glands were palpable. Both arms could be raised over the head vertically with the scapulae remaining symmetrical.

The lungs showed a tympanitic percussion note throughout with a few dry rales at the left apex and sub-clavicular region. The heart, palpable arteries, and pulse were normal. The abdomen showed moderate gaseous distention. The tonicity of the walls was normal. The spleen was not enlarged by percussion or palpation. The liver showed hypertrophy of both lobes, extending three inches below the right costal margin. The inguinal and epitrochlear glands were enlarged. The knee jerk was markedly exaggerated, but no ankle clonus or special reactions could be obtained. The physical examination thus revealed paralysis of the right side of the tongue, atrophy of the right sterno-mastoid, a hypertrophic liver and marked abdominal flatulence.
Examination of the urine showed but one abnormality, the abundant presence of calcium oxalate crystals. Feces and blood were normal.

The nature of the paralysis in the neck and tongue justifies diagnosticating a paralysis of the spinal division of the right spinal accessory nerve. The combined innervation of the trapezi from the eleventh cranial and the third and fourth cervical nerves would account for the lack of paralysis in the trapezius. With the affection of the eleventh nerve was associated a unilateral paralysis of the hypoglossal as evidenced by the hemiplegia of the tongue. The question arises whether the persistent abdominal condition, apparently due locally to faulty intestinal movement, arose from vagus influence. The absence of laryngeal paralysis and disturbance of the cardiac rate strongly oppose such an idea, but the parallel course of the intestinal condition with the paralysis of the eleventh and twelfth nerves and its resistance to every form of treatment are suggestive. The hepatic enlargement would seem to have had a toxic origin, as from alcohol or other irritant, in spite of the clear history given by the patient.

An interesting reaction was obtained when for two days the patient was put on anti-luetic medication. Administration of the mercury and iodide mixture on January 26th and 27th was followed by a significant rise in temperature from 37 degrees to 39 degrees on the evening of the second day, and a return to normal on the day following. This temperature reaction was associated with severe headache, anorexia and restlessness.

The patient left the hospital on February 26th, considerably improved in general health, but with no change in the tongue, neck, or abdominal condition. Spinal accessory paralysis is ordinarily of peripheral origin, from pressure of an inflammatory or tumor mass, cold, trauma, etc. The unilateral nature of the accessory and hypoglossal paralysis in this case is in keeping with this usual causation, even though no local lesion or point of injury could be found. If the patient's statement is credible that the condition was progressive, only longer observation would throw light on the essential etiology and reveal a possible bulbar implication.
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The yearly subscription to the China Medical Missionary Association is $4 Mex., payable in January of each year. This includes the Journal and postage on the same, whether local or foreign.

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

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

Editorial.

PROGRAMME OF 1915 CONFERENCE.

"Lest we forget."

Do not overlook the fact that the next Conference of the C. M. M. A. takes place in Shanghai, beginning February 2nd, 1915. The Committee on Programme, of which Dr. Cole of Ningpo is chairman, is trying to arrange an unusually attractive programme for this conference, but they must depend on the rank and file of the C. M. M. A., for the scientific contributions to the meetings.

In this issue of the Journal will be seen a detailed report by Dr. Cole, on behalf of the committee, of the plans for the meetings. Do not fail to refer to it to see what a helpful conference is being planned by our committee.

If you have a good paper in your mind's eye or even a good thought—and surely you are not destitute of both—get in touch by letter with the committee. Even if you can not contribute a paper, you can at least add your presence; therefore begin to plan for that now. If you live out in Szechwan, or some other distant place, mark February 2nd, 1915, on your calendar as a date for a shopping trip to Shanghai. Do not forget this, for it is important. In addition to the scientific papers, there are to be some interesting questions for the business meetings and everybody ought to get there to help discuss them. You may be just the man needed to settle the question.
ENCYSTED AMEBAE AND LARGE DOSES OF EMETIN.

While the value of emetin in the treatment of the symptoms of amebic dysentery is established beyond question by reports from all parts of the world, and while the fact that it causes degeneration and disintegration of the amebae can be demonstrated under the microscope, yet it is also now known that relapses do occur and that encysted forms of amebae persist after the usual treatment of amebic dysentery with emetin.

Our attention was first called to this fact on a recent visit to the Philippine Islands, where we met several physicians who said that they had in their experience met with many cases of relapse, and other observers who had found the amebae still persisting in the stools after the disappearance of all clinical symptoms under treatment with emetin.

When we remember that the amebae are buried in the tissues and are found in the lymph spaces and blood vessels of the intestines, it is easy to understand the demonstrated fact that, while ipecac by mouth will clear up the symptoms in most cases, the amebae will still persist, but emetin circulating in the blood and tissues is quite another matter, and we have reason to expect different results; whether, therefore, emetin given in proper dosage will be able to destroy all forms and stages of the ameba is an interesting question and one for the determination of which sufficient data are not yet available.

Meanwhile what should be our standard of treatment with the aim of destroying all forms of the ameba in the patient, to prevent relapse and liver abscess, for we must remember that all amebic cases are potential liver abscesses, and to do away with the chronic ameba carrier, which Walker has shown is the source of infection in the majority of cases? For answer we have to turn to analogy for our guidance in the matter. James (Am. J. Trop. Dis.) says in this connection:

The well-known studies of Ehrlich with respect to the immunity obtained by various protozoa against the drugs used to combat infections with them have led to the belief that when means are available the protozoa should be killed as rapidly as possible, in order that no residual protozoa, immune against the drug or drugs employed, should remain. The employment of a drug in as large a dose as possible, and repeated as often as is consistent with safety, is known as the therapia
sterilizans magna, and such use of a drug has been shown in malaria and in syphilis to be the most effective method.

For this reason we treat our cases of amebic dysentery and of liver abscesses by employing the emetin in as large an initial dose as possible, push it as rapidly as we can to toleration, and keep it there until we are satisfied that as far as we know the infection has been eliminated. We begin with a dose of one-half to one grain, and then give from two to four and one-half grains a day hypodermically, depending on the toleration of the patient.

Let us further review some of the recent literature on this subject. Dopter, writing in Bulletin de l'Acad. de Med., November 18th, 1913, gives his experience in 51 cases treated with emetin, showing that there is invariably destruction of the amebae at large by emetin, but it seems powerless to affect the encysted forms, hence it does not protect against relapse; but relapses are promptly cured by emetin.


Baermann and Heinemann report the use of emetin in 22 cases. Seven of their cases were too far advanced to be able to counteract the effects of extensive ulceration and hemorrhage and consequently died. At the time of this report six months after treatment, only three of their cases were still free from both amebae and cysts. In one case, after eliminating all active amebae by two injections of 100 mg., the stools, still showing cysts, were fed to kittens which developed amebic dysentery in twelve days. In conclusion these authors point out that emetin seems to have very little effect on cysts. They further conclude that emetin is strongly amebatropic and amebacidal but that there are races of emetin-fast amebae. They recommend one or two subcutaneous or, better, intravenous injections, of 100 to 150 mg., of emetin to be followed every second or third day with subcutaneous injections of 100 to 120 mg., for four or five doses, then the giving of emetin is to be repeated at three or four weeks intervals.

Allen, who has treated twelve cases himself, says:—

My limited experience has served to convince me that small doses repeated daily or almost daily for a few days, are not sufficient to eradicate the amebae, for more than half of my cases have relapsed within the first year after treatment. As nobody has reported bad results, I think it better to give maximum instead of minimum doses, that is two to three grains instead of one half to one grain. The necessity for intermittent treatment seems evident. Rest in bed and restricted diet seem unnecessary except in the severest cases.
From a review of recent literature, then, it would seem best that we should not rest contented with the disappearance of clinical symptoms only, in a given case of amebic dysentery, but should try to eradicate the disease. First because of tendency to relapse, secondly because of danger of liver abscess, and thirdly because of the menace to society of a chronic amebae carrier. As to best method of treatment in the light of the above reports and recommendations and considering the difficulty of getting rid of the encysted forms we should start with large initial doses of emetin (intravenously preferably) followed by doses for several days at intervals of two or three days until about twelve grains had been given. Then at intervals of two to three weeks for some time or until encysted forms were absent from the stools. In addition, rectal irrigations of bland solutions for the chronic ulceration of the bowel and in intractable cases (which are very rare with emetin in proper doses) ipecac by mouth might be tried. It would appear that even the cystic forms must finally disappear from the lumen of the gut by this combination of emetin with the mechanical cleansing of rectal irrigations.

THE PREPARATION OF MEDICAL MISSIONARIES AND NURSES—A QUESTIONNAIRE.

If medical missionaries in China believe that the training of those who are to be their assistants and successors is an important thing; and if they believe that in these days when China is forming her own ideals as to the practice of medicine and her own standards as to the training of physicians for her future, the kind of physicians sent out from western lands is of the utmost significance; then the appeal in the questionnaire found elsewhere in this issue ought to meet with hearty response.

The questions are sent out by the American Sub-committee on the Preparation of Medical Missionaries and Nurses, this being a body delegated by the Joint Federation of American missionary societies (meeting each year in January), to make the necessary inquiry. While it is probable that the questions will interest American physicians and nurses in particular, it would be a source of great satisfaction to the American Committee to hear from other interested persons. To those who have studied the matter at all,
the standard now defined as "acceptable" by the Council on Medical Education of the American Medical Association, seems the only logical one for the Boards to set up as the one by which, professionally speaking, their future candidates shall be judged.

Edward H. Hume.

DISSECTION IN CHINA.

While, in several isolated instances in the past, medical missionaries have succeeded in obtaining consent for partial or complete necropsies, yet those opportunities have been extremely rare, and no opportunities for dissection of the human body outside of the foreign ports have been even dreamed of. It is, then, with the greatest interest and delight, that all medical men especially those interested primarily in teaching medicine will read the Regulations for Dissection and Post-mortems which has been issued by the Board of Interior in Peking. A copy of these Regulations will be found in this issue in the section on Correspondence. Dr. Wu Lien Teh has been advocating the adoption of such rules by the Government for some time, and it was a prominent point in his recent Memorandum on Medical Education in China.

How much this official recognition and encouragement of dissection by the Government will mean for the future progress of all medical instruction in China, it is impossible to overestimate, but it is suggested by those who are in touch with the authorities in Peking that in order to avoid abuse of this privilege during the early years of its inauguration and thereby causing an unfavorable reaction against it in the Chinese mind, that those taking advantage of it should do so with the greatest circumspection and care and avoid giving offense as far as possible to the Chinese mind as yet unaccustomed to the thought of the least mutilation of the body after death.

HODGKIN'S DISEASE.

While the discovery of vaccination against smallpox preceded the determination of the causative organism, it is very unlikely that, in the future, methods of prophylaxis and prevention will be brought to light in medicine apart from accurate knowledge of the
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exact etiology of disease. The entire profession is therefore under a great debt to Drs. Bunting and Yates, of the University of Wisconsin, Department of Pathology, for the careful work which has recently brought to light the causative organism of Hodgkin's Disease. Their first note, published in the Journal of the American Medical Association at the end of 1913 has been followed by a more recent supplementary note, the important portions of which are quoted in full elsewhere in this issue. Their entire work should be carefully studied.

Aside from the discovery of the etiological organism, Bunting and Yates have pointed out a feature of the malady which has not hitherto been dwelt on in clinical descriptions, namely, the presence of extensive areas of necrosis proceeding even to suppuration. The old lesson is once more emphasized that clinical observation is never complete and exact without the corrective of pathological study.

Hodgkin's Disease is seen every now and then in China, and it would be a source of great gratification to Drs. Bunting and Yates if material so available could either be put into their possession, or if cultures could be taken to confirm, for China, their epoch-making observations. Cultures of Bacterium Hodgkini will be available in China after a few weeks for any who wish to make comparative studies.

Edward H. Hume.

TUBERCULOSIS SANITARIUM FOR CHINESE.

The recent opening of the sanitarium for tuberculous Chinese patient on Kuling fills a long felt want. There are very few of us who in a year do not meet with the question of what to do with a valuable helper or a Chinese friend who has developed tuberculosis and desires advice and effective treatment. Too often in the past have we had to give a discouraging prognosis because we knew the patient in his own home surroundings would find such treatment practically impossible and we knew no sanitarium to which to recommend him. The announcement by Dr. Berkin in this issue of the Kuling Sanitarium will be welcomed by all of us. It is reported that a tuberculous sanitarium is also being arranged for on the Hill, west of Peking, in memory of the late Dr. F. W. Hall. It is to be hoped that these plans, too, will be consummated.
Preliminary Report of Programme Committee C. M. M. A.
Conference, Shanghai, 1915.

The Biennial Conference of the C. M. M. A. will be held in Shanghai in 1915. The opening meeting will be a social gathering which will be held on the evening of Monday, February 2nd, 1915.

Hours of meeting for the Conference will be from 9 to 12 in the morning and from 2 to 4 in the afternoon. The Union Church Hall, with its side offices and ante rooms, has been engaged for the meetings.

All papers for the Conference should be sent in to Dr. A. F. Cole, Ningpo, Chekiang, on or before December 1st, 1914, in order that the printing of the papers may be completed before delegates assemble. This means that the Programme Committee will try to have the chief papers already in print and ready for the delegates. In this way sufficient time will be allowed for discussion, which is often more valuable than the paper itself.

In writing papers, it should be noted by the members that criticism has been made in the past that many of the papers read at previous conferences contained a good deal of subject matter which might equally well have been found in the ordinary text books. *Verbum sap.*

It might be said at this juncture, that Dr. R. T. Leiper of the London School of Tropical Medicine, who is now in China making a special study of trematodes, has promised a paper for the Conference. It will be remembered that it was Dr. Leiper who recently demonstrated the intermediate host of *Filaria loa*.

Important features of the Conference will be:

1. Special pathological museum. All members are requested to bring specimens and photographs.
2. An exhibit of model X-Ray outfits suitable for mission-hospitals is hoped for. Firms wishing to exhibit will please communicate with Dr. A. F. Cole, Ningpo.
3. A demonstration of the value of cystoscopic examination will be made by local physicians on selected patients.
4. An exhibit of Chinese surgical instruments and drugs would be welcomed and if any members would undertake this work, the Programme Committee would be glad to hear from them. Though we have all seen evidences of the malpractice of quacks in China, it might be instructive to learn more of the instruments and methods used.
5. A good collection of medical books will be displayed.
An exhibit of surgical and medical instruments and apparatus. Any firms wishing for space to exhibit are asked to communicate with Dr. Cole, Ningpo.

The central idea of the Committee is that the meetings shall be of a practical character and such that members attending will carry home with them many thoughts and ideas that will help them do better work in the future. This applies to the spiritual as well as to the professional side of the work.

On behalf of the Programme Committee,

A. F. Cole, Ningpo.

Minutes of Meeting of Executive Committee of C. M. M. A.

A meeting of the Executive Committee was held February 20th, 1914. The following members were present:—Drs. Main, Johnson, Beebe, Cole, Lincoln, Venable, and Morris.

Dr. Johnson reported that two possibilities for the position of Organizing Secretary found that they were unable to give up their whole time to the work of the Association.

The regulations drawn up by the committees from the Nurses' Association and the C. M. M. A. were approved. The following examiners were appointed by the Executive to act with the examiners from the N. A. C.; for 1 year, Dr. Henry Fowler; for 2 years, Dr. H. B. Taylor.

The date for the biennial meeting of the C. M. M. A. was fixed to begin Monday evening, February 2nd, 1915, with a social gathering.

The Shanghai members of the Association were appointed as a general committee to make the local arrangements for the meeting. Drs. Cole, Venable, and Lincoln were appointed as a committee on subject matter and program for the meeting.

A motion was carried to allow necessary expenses for postage, etc., for the Research Committee.

A letter from Dr. Wenham in regard to medical education was read and discussed. It was moved and carried to thank him for his able statement of the matter and that his letter be published in the Journal.

Drs. Beebe, Venable, and Cole were appointed a committee to report on questions of medical education brought up by Dr. Wenham's letter, Dr. Wu Lien-teh's communication, and other communications they may receive.

Dr. Cole proposed the following, which was carried:—That this Executive Committee desires to place on record its appreciation of the
Minutes of Executive Committee of C.M.M.A.

fact that the Central Government of China has officially sanctioned dissection of the human body for the purpose of medical teaching: it also strongly recommends that whenever possible members of the Association should try to obtain permission from relatives to perform autopsies.

It was moved that Dr. W. W. Cadbury be approached in regard to taking the position of Organizing Secretary. This was carried.

The following resolution was carried:—That the President put a note into the Journal calling attention to the importance of Dr. Wenham's letter and asking for discussion on it.

A sub-committee consisting of Drs. Cole, Johnson, Lincoln, and Morris was appointed to interview Dr. Snell on the following day in regard to his proposition for Business Manager.

The meeting then adjourned.

H. H. Morris, Secretary.

Meeting of the Executive Committee, April 8th, Shanghai.

The following members were present:—Drs. Main, Johnson, Beebe, Cole, Hutcheson, Lincoln, Venable, and Morris.

The minutes of the last meeting were read and approved. The committee appointed at the last meeting to interview Dr. Snell, in regard to the position of Business Manager of the Journal, reported that they had accepted his proposition and had appointed him to that position, the payment to stenographer not to commence before May 15th. This report was accepted and approved.

A letter from Dr. Fowler, stating that he was unable to accept the position of examiner in connection with the Nurses' Association, was read, and Dr. W. A. Tatchell was appointed in his place, to serve for one year.

It was reported that Dr. Cadbury had declined the offer of the position of Organizing Secretary.

A letter from Dr. P. B. Cousland was read tendering his resignation and making suggestions for the continuance of the work and the appointment of a successor. The following action was taken:

1.—Resolved, That the Executive Committee regretfully accept Dr. Cousland's resignation as editor and secretary of the Publication Committee, expressing in this connection its highest appreciation of the valuable services he has rendered to the Association in that position.

2.—That Dr. P. L. McAll be appointed as his successor with a view to his also giving part of his time to the work of organizing secretary of the C. M. M. A. until a man be found to give his whole time to that work.

3.—That the secretary approach the London Missionary Society with a view to releasing Dr. P. L. McAll for this work.

These three resolutions were all carried.
The following committee was appointed to gather information to have available for Dr. Judson when he arrives, if wanted by him; Drs. Lincoln, Houghton, Hutcheson, Snell, and Morris.

Dr. Venable brought forward the following motions which were carried:—That Dr. Main visit Nanking, Hankow, Tsinanfu, and Peking, in order (1st) to endeavor to secure Dr. McAll for his work, and (2nd) to discuss the question of medical education with as many educators and medical missionaries as possible, with special reference to the language to be employed, making every effort to bring the different medical schools into co-operation and harmonious action in this respect.

The hours for the sessions at the next biennial meeting were fixed for 9 a.m. to 12 noon and from 2 to 4 p.m.

On motion the meeting adjourned.

H. H. Morris, Secretary.

RESEARCH COMMITTEE.

Most of the members of the C. M. M. A. are aware that the Research Committee is endeavoring to obtain material for a study of tropical ulcer in China.

Apparently there has been some misunderstanding of what this work is expected to accomplish, and a brief explanation may not be out of place. The primary object of the work is not to collect specimens of tropical ulcer, as appears to have been inferred by some, but to obtain data on which to base conclusions as to the probable presence or absence of the disease in any given neighborhood, and as to its relative frequency if present. Even if certain that tropical ulcer does not occur in your vicinity, therefore, do not fail to send in slides: it may not only prove the correctness of your opinion, but help to map out the geographical range of the disease. The same observation applies to the point of seasonal prevalence.

At the time of writing, a fairly satisfactory amount of material has been obtained from the Yangtse basin, but the northern and southern provinces have yielded very little. This is much to be regretted, as practically all of the positive findings to date have come from the Yangtse Valley, and without much more material from elsewhere little can be done toward determining geographical limitations. If members in the north and south will contribute the material already promised, it is certain that this point will in a measure be cleared up. Any help given beyond the twenty-five smears "nominated in the
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bond’” will be very welcome as, obviously, the greater amount of material, the more accurate will be the results. In such work as this, there is no such thing as too much.

No small annoyance will be avoided if contributors will remember to indicate in some way the place of origin of the specimens. A number of slides are coming in with nothing to indicate the identity or whereabouts of the sender beyond the postmarks. These are frequently quite illegible, and while at times it has been possible to identify the specimens successfully either by the postmark or chirography of the sender, at other times both of these detective methods fail—especially when the specimens are addressed by typewriter. If anyone remembers sending slides without designating the place of origin, or has failed to receive an acknowledgement of slides sent in, please communicate with Dr. H. E. Eggers, 7 Siccawei Road, Shanghai, and confer thereby a favor both on him and on the committee.

Requests for co-operation in this work were sent to everyone in the Association, but in a certain number of instances known to the committee the post-cards went astray in the mails. If this be read, therefore, by anyone who failed to receive from the committee a formal request of assistance, and who is willing to help in this work, kindly indicate your willingness on a post-card sent to the above address, and slides and instructions will be sent.

HENRY S. HOUGHTON, Chairman.

Board of Missionary Preparation (U. S. America) 1913.

Questionnaire on the Preparation of Medical Missionaries and Nurses.

I. General.

1. Should the medical missionary be required to have as high a degree of general education as the general or evangelistic missionary?

2. Should the medical missionary be required to attain to as high standard of medical education as the medical practitioner at home?

3. Would you advise that Mission Boards appoint as medical missionaries only those who, on graduation, receive the endorsement of the faculty of ‘an acceptable medical college’? (See III 2.)

4. Have you noted a greater lack of preliminary preparation on the part of candidates offering themselves for medical service than for evangelistic or educational service?
Has the educational standard of your board been lower in the case of medical candidates than of those offering for evangelistic work?

In view of the large cost involved in securing a medical education, do you think it desirable that mission boards make provision to aid worthy students in this department?

What influence do you think the cost of securing a medical education has upon the supply of medical missionaries?

Are we to look upon medicine merely as a means of opening the way for, and drawing the people to, the evangelistic message of the missionary, or are we to look upon the medical missionary as a pioneer in the creation of the medical profession in countries where modern medicine is not known; or, again, is the medical missionary to be regarded as one whose work, co-ordinate with that of the educational and evangelistic missionary, is to bring about the creation of a community of Christian citizens?

Will the best results be secured for the medical missionary work if men and women who have already decided to be missionaries are turned toward medicine (provided, of course, they have some bent in that direction); or is it best to take as medical missionaries those who have already decided to become doctors and are induced to become missionaries?

II. Preparation for the Medical Course.

Is it practical and desirable to establish a minimum standard of preparation for medical missionary candidates for the period prior to their entry upon their medical course?

Would you consider the standard suggested by the Council on Medical Education of the American Medical Association as a requirement for the admission of all students into the standard medical schools a satisfactory one?—viz.: "A requirement for admission of at least a four-year-high-school education, and in addition at least one year of college work, including at least eight semester hours each of physics, chemistry, biology, and German or French."

Would you advise that mission boards adopt the above standard for their medical candidates?

If not, what standard would you suggest?

Do you consider it essential, both in view of the medical course and prospective work in a foreign land, that a medical missionary candidate should give special attention to language study in his preparatory course?
III. MEDICAL PREPARATION.

A. The School.
1. Do you think it practical and desirable that mission boards should agree upon a list of standard medical schools and appoint as medical missionaries only those who graduate from such schools?
2. Would you consider the essentials of an acceptable medical college as outlined by the Council on Medical Education of the American Medical Association a proper standard for adoption by mission boards?

B. The Course.
1. Should a four-years' medical course be insisted upon by mission boards?
   If not, what length of course would you suggest?
2. Should the prospective medical missionary take the regular course offered in the medical school, specializing afterward if thought desirable, or may he profitably deviate from the course in view of the special work he expects to do?
3. Does the fact that medical schools for the training of native doctors are being established in nearly all mission countries indicate that in the future medical candidates should be selected and trained with a view to their becoming teachers of medicine rather than practitioners?
   If so, how much attention should be given to preparation in the science of teaching medicine?

IV. ADDITIONAL PREPARATION AFTER GRADUATION FROM THE MEDICAL SCHOOL.

A. At Home.
1. In what branches should a prospective medical missionary specialize or take postgraduate study before entering upon his missionary work?
   a. Surgery?
   b. Obstetrics?
   c. Eye, Ear, Throat?
   d. Tropical diseases?
   e.
   f.
2. Is it desirable that women physicians should specialize in the diseases of women and in obstetrics?
   Is there likely to be any advantage from undertaking this study in a school attended exclusively by women?
3. Should a hospital course in the home land be insisted upon even though a candidate is going to a well equipped hospital on the field? Should this be taken in a general hospital? How many years are necessary in a hospital?

4. Do you think it advisable that medical missionary candidates should pass the examination of some State Board of Examiners before leaving for their field?

B. On the Field.

1. Is it practicable and would you advise that medical missionaries definitely plan for additional hospital work on the field before entering formally upon their missionary work?

2. Would you advise the new medical missionary to spend some time under the immediate supervision of an experienced medical missionary before being put in charge of a hospital or assigned to medical work of a station?

3. Should medical missionaries have equal opportunity with other missionaries for the study of the language of the country to which they go before taking up the active practice of medicine?

V. Preparation in Other Departments than Medicine.

1. Should a medical missionary definitely plan to do work on the field in other departments than medicine?
   a. Evangelistic?
   b. Educational?
   c. General oversight of churches, schools, etc.?
   d. Responsibility for miscellaneous station problems?

2. What proportion of the time of a medical missionary may wisely be given to the four departments of work specified above?

3. Would you think it advisable to appoint as a medical missionary one who has not felt a definite call to missionary service—who would not go out primarily as a missionary?

Upon your answers to the foregoing will depend your replies to the following:

4. Should a medical missionary student be required to take definite courses in:
   a. The Bible, that he may have full share in the work of its teaching?
   b. Sociology, that he may better appreciate and more readily help solve the social problems of the people?
   c. Pedagogy, that he may most helpfully instruct his assistants and if necessary teach in a medical school?
Preparation of Medical Missionaries.

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d. History of Religions and Comparative Religions, that he may better understand the nature of the missionary's task?

c. Church History, that he may know how best to help direct the organized life of the churches?

f. Practical Christian Work, that he may most tactfully lead men and women into a new spiritual life?

5. In what other departments do you think a medical missionary should be prepared?

6. If not required to take definite courses in the above, what would you suggest as a minimum requirement of knowledge or preparation in the several departments mentioned?

7. Is it practicable or desirable that a medical candidate secure preparation in the above while in medical college, or should this preparation be undertaken after his graduation?

8. Is it desirable that prospective medical missionaries while in medical schools group themselves in Christian hostels or boarding houses or mingle freely with the other students?

VI. Nurses.

How far would you apply your answers to the foregoing questions to nurses seeking appointment in missionary hospitals abroad, as concerns:

a. their preliminary preparation?

b. their professional training?

c. their preparation after graduation?

Signed........ ....................  ....

...............................  ........

Dated........ .......  ............

Kindly send answers to

Dr. E. H. Hume,

Changsha, Hunan.
Tuberculin in Diagnosis and Treatment by Frances Marion Pottenger, M.D., LL.D., (St. Louis, C. V. Mosby Company).

This is one of the Mosby Company's monographs. To the beginner in the use of tuberculin the book is very interesting. The first five chapters are devoted to the various tuberculin tests. That these tests are of value is now generally accepted. It is important for the individual practitioner to be able to interpret a positive reaction aright. The author's hints on this subject are fair and logical.

The chapter on dilution or the technic of administering tuberculin is very carefully written. It gives full instructions for the proper use of a much-abused but effective remedy.

C. M. L.


The author offers a plain and practical account of nervous disorders. He points no royal road to the learning of neurology, but omits the excessive technicalities of the specialist. It is his endeavour to put actually known changes of structure into symptomatic relationship with the observed alterations of normal function, using the comparative methods of differential diagnosis. The essential points in any subject are emphasized, whether that be pathology, symptomatology, etiology, or treatment, the rigid balancing of proportion in the classified parts of any disease under discussion not being attempted.

The book commences with a chapter on anatomy and physiology, and other chapters on method of examination, and cerebral localization. Then follow chapters on the more urgent and more frequent conditions met with in practice, as apoplexy in its various forms, encephalitis, Jacksonian epilepsy, aphasia, brain tumors. Diseases of the peripheral nervous system and functional nervous diseases are dealt with in two interesting chapters. Surgical disorders from concussion and fracture of skull are new in this edition, as are also articles on Wasserman reaction and psychoanalysis.

This book will be found by readers a useful guide to the systematic examination of such cases of nervous disease as they may meet, and will assist in treatment of a very difficult class of illnesses.
The printing, illustrating, and general get-up of the book do all credit to the joint efforts of author and publisher.

H. C. P.


Appendicitis has made Deaver famous and Deaver has made appendicitis popular—at least in America where about every fourth man is appendixless. Appendicitis is not yet epidemic in China, but if "in time of peace prepare for war" is good advice I would recommend that every surgeon now in China purchase a copy of this book and prepare himself for the scourge which follows modern civilization. There is no one who has a better right to speak on the subject of appendicitis than the author of this book of three hundred and sixty pages now in its fourth edition. The latest methods of treatment of general peritonitis and of appendicular peritonitis are given in detail.

Jackson's membrane, Lane's kink, and mobile caecum are all discussed and disposed of. For the man who is looking for an up-to-date book full of practical points on appendicitis, we know of no better treatise published than the one written by this renowned surgeon and teacher.

J. C. McC.

Materia Medica, Tables and Notes 藥科學薈釁 by Bernard E. Read, Union Medical College, Peking.

When we recall how useful, in fact how indispensable, we found our little pocket Materia Medica with its tables of drugs and doses in our earlier years, and how often we have recourse to these guides at all times, we can not but welcome the book just translated by Dr. Read of Peking for Chinese students and practitioners.

It includes tables of Materia Medica, Vegetable, Animal, Inorganic; Tables of Standard Preparations, also Therapeutic Index of Diseases. All the more important drugs of the B. P. and U. S. P. are mentioned, together with certain selections from the B. P. C. It gives the student in a handy form the doses, strengths, etc., which he is constantly requiring in his work.

Further copies may be obtained at 40 cents Mex. from Mr. G. G. Wilson, Union Medical College, Peking.

A. C. H.
BOOK NOTICES.


W. B. Saunders Co., 9 Henrietta St., Covent Garden, London, announces the following recently published books:

DORLAND'S ILLUSTRATED MEDICAL DICTIONARY. New (7th) Edition. The terms used in Medicine, Surgery, Biology, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Medicine, and kindred branches. Over 100 elaborate tables. By W. A. Newman Dorland, M.D., Member Committee on Nomenclature and Classification of Diseases of the American Medical Association. Octavo of 1107 pages, with 331 illustrations, 119 in colors. Flexible leather, 19s. net; thumb indexed, 21s. net.


P. Blakiston's Son and Co., Philadelphia, announce the following recently published books:

OPERATIVE AND DENTAL ANATOMY TECHNICS. A Classroom and Laboratory Manual. By W. H. O. McGehee, D.D.S., M.D., Professor of Operative and Prosthetic Dentistry and Superintendent of Clinics, Ohio College of Dental Surgery; Member of the Commission on Operative Technics of the Institute of Dental Pedagogics, etc. With 235 Illustrations. 12mo. Flexible Cloth, Round Corners, $2.00.


PHARMACUTICAL BOTANY. By Herman W. Younken, Ph. G., A.M., Asst. Professor of Botany and Pharmacognosy at the Medico-Chirurgical College, Edited by F. F. Stewart, M.D., Ph. G., Professor of Materia Medica, Depts. of Pharmacy and Chemistry, Medico-Chirurgical College, Philadelphia. With 39 Illustrations. Flexible Cloth, Round Corners, $1.00.


IMMUNITY. METHODS OF DIAGNOSIS AND THERAPY AND THEIR PRACTICAL APPLICATION. By Dr. J. Citron of Berlin. Translated and edited by A. L. Garbat, M.D., Assistant Pathologist, German Hospital, New York. 2nd Edition Revised. 3 New Chapters. 8vo. 30 Illustrations, 2 Colored Plates and 8 Charts. Cloth, $3.50.
ITEMS OF INTEREST.

The 27 students of the Union Medical College, Hankow, represent 15 different missions. Of the 20 graduates of the College since its beginning twelve years ago, 17 are in mission service, one in the army, one in private practice, and one undecided.

The Biennial Conference of the C. M. M. A. opens February 2nd, 1915.

Dr. R. T. Leiper of the London School of Tropical Medicine is now in China making a special study of the trematodes. Dr. Leiper will be in China for many months and it is earnestly to be hoped that he will be rewarded in his search for the life history of some of the important trematode parasites of the Yangtse Valley. It will be remembered that it was Dr. Leiper who, last year in Africa, proved that the metamorphosis of *Filaria loa* takes place in the salivary glands in a fly belonging to the genus *Chrysops*.

On the death of Dr. J. G. Gibb, the Chinese Government, through the Red Cross Society, gave $1,000.00 to his widow for a memorial to him. This sum she has placed at the disposal of the Union Medical College, Peking, for the equipment of a bacteriological laboratory. The faculty are hoping to raise $2,000.00 more to make possible the erection of a suitable Gibb Memorial Laboratory.

There are 46 medical students in the Union Medical College, Tsiananfu, 23 of whom are in the entering class this year.
The year 1913 was the Jubilee Year of the Swatow Mission Hospital of the English Presbyterian Mission, Dr. Wm. Gauld having commenced work there in a Chinese house in November, 1863.

Dr. Preston Maxwell of Yungchun, Fukien, writes in his hospital report:

One is sorry to have to report that diphtheria has for the first time appeared in epidemic form. This is not a disease of Fukien, and although isolated cases have been seen in the ports these have been imported, or at any rate there has been not merely the chance but the probability that the infection came from outside. In the case of this epidemic the infection was imported from the Straits. Laryngeal cases were not uncommon and the mortality was considerable.

A generous friend has given us the money for the completion of our X-ray installation and we hope to have it at work early in the New Year.

There was last year a total of 300 medical students in the nine leading medical schools under mission control in China.

At the third annual session of the Clinical Congress of Surgeons of North America, resolutions to standardize surgical education were presented by Franklin H. Martin, and seconded by John B. Murphy. These resolutions if made effective through legislation will require that every physician in the United States and Canada shall have been recognized and registered as a competent surgeon before he is allowed to perform surgical operations. The resolutions propose that colleges and other appropriate authorities shall be vested with the power to award supplementary degrees to physicians qualified for surgical work.

On January 3rd of this year, Dr. S. Weir Mitchell, the physician and man of letters, passed away at the age of eighty-three. Few physicians of this century can compare with Dr. Mitchell in the versatility of his interests and accomplishments, during his life.

The Chamber of Deputies of the French Government adopted in Paris, March 11th, a grant of 25,000 fr. for a Faculty of Medicine at Shanghai.

The American Tsing-hua College will send one hundred students to America this year.

The Peking Government Hospital intends to introduce at an early date obligatory vaccination against smallpox for children.

Commenting on the announcement that Wu Lien-teh (G. L. Tuck), M.A., M.D., Cantab., the director of the North Manchurian Plague Prevention Service, has had the honour of being granted the Chia Ho (third-class) Decoration, the Journal of Tropical Medicine and Hygiene remarks: This is the highest rank ever conferred upon a medical man.
by the Government of China; the Chia Ho Decoration ranks with those conferred on the heads of departments of the Chinese Foreign Office, to which Wu Lien-teh is the Medical Officer. Dr. Wu, better known in this country by his adopted name of G. L. Tuck, took a prominent part in the Tropical Section of the International Medical Congress in London in August, 1913, and gave an interesting and comprehensive account of plague in Manchuria, and of the part presumed to be played in the spread of the disease by the tarbagan. We congratulate Dr. Wu Lien-teh upon the well-deserved honour bestowed upon him, and it augurs well for the future of modern medicine in China that the Government recognises the important position medicine and hygiene occupy in the welfare of the State.

Under the new regulations adopted by the New York City Board of Health, only milk produced under the rules governing the sale of certified milk can be sold raw. All milk not meeting these requirements must be pasteurized. For the last four years, plans have been under way for the pasteurization of the entire milk supply of the general market of the City of New York, and these new rules are the final step in the accomplishment of this.—Am. Jour. Trop. Dis.

A new policy with regard to medical practice has been adopted in India. The important civil medical positions, formerly held only by officers of the medical corps of the Indian army, are now open to native practitioners. Serious objections are made to this by some, who point out the effect of this change upon European officials all over India, and the great objection of European women to native doctors.—(idem.).

Sir Malcolm Morris of London, in a lecture on leprosy delivered November 19th, surprised his audience by asserting that there are many lepers in London. There is no law in England to prevent the entrance of lepers into the country, but efforts are being made to provide a small institution for their care.—(id.).

The rapid and continuous increase in the number of medical students at the Austrian universities is occasioning serious concern among practitioners, many of whom are already scarcely able to make a living. There are 600 medical "freshmen" at Vienna University this term, constituting a "record" figure.

The Vienna Medical Association is collecting statistics of the number of practising doctors in Austria, with the object of inducing the Minister of Education to adopt radical measures to restrict entries into the medical departments of the universities.—S. Times.
The China Medical Journal.

Nurses' Association.

We are pleased to give a more detailed account of our meetings for June 30th-July 2nd, 1914. The programme given below is as near as we can say. Any way, these are the subjects for discussion and we hope they will prove helpful to all who hear, or afterwards read of, them. Might we take this opportunity of asking members to either bring suggestions, or send them, of subjects for discussion at our 1915 gathering?

At last we have the pleasure of putting in our corner in the C. M. J. Miss Ogden's (Auking) paper on "Anesthesia," which those of us who were unable to hear will welcome.

PROGRAMME, JUNE 30TH TO JULY 2ND, 1914.

Tuesday, June 30th, 3 p.m.

Opening Address and invocation.

Papers on:

- Social Service in America and School Inspection, etc., Miss Gordon.
- In Chinese. One of Dr. Stone's Nurses.
- Midwifery Training in England and China. Miss Hope Bell.
- Rescue Work. Miss Henderson.
- Mrs. Mitchell.

Wednesday, July 1st, 10 a.m.

Reports: President. Secretary. Treasurer.

Business Meeting: Election of Officers.

Discussion of books needed for a Nurses' Library.

Responsibility to the C. M. J., page. Discussion led by Mrs. Burnip.

Wednesday, July 1st, 3 p.m.

Chinese Pupil Nurses. Miss Simpson. Discussion.

Chinese Graduate Nurses. Miss Withers.

Place of Association in a Nurse's life. Miss Albaugh.

Thursday, July 2nd, 10 a.m.

Registration and Standardization of Nurses—What it has accomplished.

How the N. A. C. can best help China and get in touch with Chinese Nurses. Miss Chung.
The Superintendent's Problems: Instruction; Responsibility. Miss Hood.

How much should superintendents know of the different hospital departments. Miss Loader.

Thursday, July 2nd, 3 p.m.

Present day Training School Methods. Miss Tomlinson.

Home Leave: How best to utilize it. Best places for study.


America. Miss Ogden.

Europe. Miss Hoolande.


A. Clark, Secretary N. A. C.

A Three Months' Course in Anesthesia at St. Mary's Hospital,
Rochester, Minnesota,
Miss M. R. Ogden, Arling.

The method of choice used in administering ether at St. Mary's Hospital is the open method. They say they have used all methods advocated that seemed at all reasonable, such as Nitrous Oxide gas as preliminary to ether, a mixture of Scopolomine and Morphine, also Chloroform and Ether, and have found them unsatisfactory and have returned to Ether drop method which they have used for over ten years. On account of this method not being followed properly, it is not always appreciated. Use a 4 oz. ether can and fit an ordinary cork with a groove in either side into its mouth, fill one groove with absorbent cotton and let it extend out of the can about half an inch. One can regulate the drop by the manner in which the point is clipped. The anesthetist should elevate the chin to such a position as not to bend the neck too far back or approximate the jaw too near the sternum. Proper elevation of the head will relax all tissues of the neck and give more freedom in breathing. This also can be said of the jaw. Holding the jaw up and forward and keeping it in position so that the patient gets the greatest amount of air possible is an important feature in giving an anesthetic.

The inhaler used is the improved Esmarch covered with two layers of stockinette. In the beginning the ether is dropped as slowly and carefully as though it were chloroform until the patient's face is flushed, then a few layers of gauze are wrapped around the mask and the ether given a trifle faster, the jaw held well forward. When the
patient is surgically anesthetised a slower regular drop is continued during the operation. Only the inexperienced touch the conjunctiva when giving an ether anesthetic.

Suggestion is a great aid in producing a comfortable narcosis. Patients should be prepared for each stage of anesthesia by being told how the anesthetic is expected to affect them. Talk them to sleep with the addition of as little ether as possible. Patients should never be allowed to talk or count as they are more apt to become noisy and boisterous. Never tell a patient to breathe deeply, for in so doing a sense of suffocation is sure to follow. A patient can be brought under ether in from 5 to 7 minutes and, when ready, do better if the operation is started at once. They teach that there is not a positive sign of narcosis on which you can rely. One depends on the deep regular respiration, relaxed jaw, and relaxed muscles, but these signs sometimes fail. During an operation, as soon as a patient begins to get control of the jaw, more complete narcosis is required. If the jaw is relaxed and in place, respiration deep and regular, color normal, quality of pulse good, there need be no fear about the rate of pulse or the pupils. Other points being equal they are certain to be right.

At St. Mary's Hospital all patients are anesthetised on the table in the operating room, preparation of the patient going on at the same time. In diverting the patient's mind in this way less ether is needed and a rapid narcosis is produced. Another reason for doing this is that in lifting and shifting the patient he is apt to regain consciousness with vomiting and the anesthetist is not sure as to the condition of her patient. In giving ether, should a patient have difficulty in breathing, remove the mask, give a liberal amount of air and then continue with the ether.

In the 500 cases I saw anesthetised, many of which I assisted, I never saw oxygen, hypodermic syringe, or tongue forceps used. It is far better to become skillful in watching symptoms and preventing them than to become proficient in the use of these articles. As a rule any patient fit for a serious operation is fit for an anesthetic, but no one is so free from danger that care in watching its effects can be dispensed with. The cases requiring the greatest care are not the young and anemic, but the strong and vigorous who inhale deeply and are apt to strangle. The anesthetist should never allow either the patient or herself to feel hurried. To give an anesthetic properly is all one person can do. As the nurse does not aspire to be either surgeon or his assistant it is not difficult for them to give their undivided attention to the anesthetic.
AN ETIOLOGIC STUDY OF HODGKIN'S DISEASE.

In a preliminary note recently published, we reported that by repeated injection of the diphtheroid organism cultivated by us from cases of Hodgkin's disease, there had been produced in monkeys lesions of the lymph-nodes showing all the essential features of early Hodgkin's disease in man. Up to that time we had been unable to demonstrate that the organism could survive in the monkey for any great length of time, and therefore we felt that we could not assert that we had produced Hodgkin's disease in the monkey, or that we had even demonstrated any great pathogenicity of the diphtheroid organism for that species.

Since making that report, however, the course of our experimental work has demonstrated fully the pathogenicity of the culture we were using, and has further shown that the virulence of the organism to the monkey may easily be increased even to the point of producing death of the animal after a relatively acute illness. While the histologic picture of the enlarged lymph-nodes of the monkey, taken three months after the successful inoculation, leaves no question as to the relation of the lesion to that of human Hodgkin's disease of the same duration, the great difficulty seems to be to secure infection and at the same time to avoid so great virulence as to produce extensive necrosis and softening and even suppuration. The working space between these two limits seems very narrow.

Extensive necrosis and leukocytic infiltration of the glands may seem foreign to the usual chronic picture of the lymph-nodes in Hodgkin's disease, yet a recent clinical case has demonstrated that even in man the virulence of the organism may be such as to lead to these features. With an apparent duration of six months, there is in this case marked involvement of cervical, axillary and mediastinal glands, febrile reaction and leukocytosis (44,000). While the excised glands show all the elements of well developed Hodgkin's disease, there are, in addition, extensive areas of necrosis, softening, and leukocytic infiltration. Yet culturally, the diphtheroid organism, which was obtained from both cervical and axillary glands, was the only organism to grow.

Thus, since our experiments demonstrate that the diphtheroid organism is pathogenic for the monkey, that it produces a progressive enlargement of the lymph-nodes, with lesions similar to those of Hodgkin's disease in man, and further that the blood-changes in the monkey are similar to those in man, we feel fully assured of the etiologic relationship of the diphtheroid organism (Bacterium hodgkini) to Hodgkin's disease.


INTRAPERITONEAL SALINE INJECTIONS IN CHOLERA.

A little over three years ago Professor Leonard Rogers described in the JOURNAL a method of treating cholera the main features of which were the administration of permanganates and the intravenous injection, guided by the blood pressure, of a hypertonic solution.
of sodium chloride in the collapse
stage. Subsequently, in 1911, while
on leave from India, he applied
the method during the epidemic of
cholera at Palermo, and it was
continued with success after he
left. Dr. Bishop gives a detailed
account of the working of a cholera
prevention scheme at the construc­
tional works of the Lower Ganges
Bridge, to which he is chief medical
officer, and describes a modification
of Rogers' method of treatment of
the disease which presented certain
advantages in the special circum­
stances, and would appear to have
afforded equally good results. For
intravenous injection asepsis and
sufficient light to make certain of
the introduction of the cannula are
necessary, but neither of these
essentials could be ensured; moreover,
the patients and their friends
objected to the requisite incision.
Dr. Bishop therefore took the bold
exercise of injecting the saline solu­
tion directly into the peritoneal
cavity. The main features of this
routine method are as follows: An
eschar about half an inch in
diameter is made with pure carbolic
acid about one inch below and to
one side of the umbilicus. An
assistant grasping the abdominal
wall on each side, lifts it well
away from the spinal column,
drawing it taut and at the same
time a little to one side, so that
the eschar is in the middle line.
A guarded trocar and cannula of
special design is then thrust boldly
through the abdominal wall at this
spot with a screwing motion and
the trocar withdrawn. The
temperature of the saline solution
injected varied in relation to the
rectal temperature; when this was
100° F. the solution was also of
that temperature, but for each de­
gree above 100° in the rectal tem­
perature that of the solution was
reduced 2°, so that with the rectal
temperature at 105° F. that of the
fluid was at 99° F. It is stated that
after the introduction of 70 to 80
oz. the patient has a desire to
micturate, and this may be taken
as an indication that enough has
been given, though there may be
no actual micturition for a few
hours. In cases so bad that the
radial pulse has almost or entirely
disappeared, the quantity of solu­
tion introduced may be sufficient
to produce some slight abdominal
distension, but, as a rule, a suitable
quantity is 80 oz. in adults and
half this in children. The injec­
tions are designed to meet the
indication of collapse. Others are
met by giving, when the patient is
first seen, 20 mm. of fluid pituitary
extract in water by the mouth,
repeating it every four hours until
micturition is established; in urgent
cases the extract is given by
hypodermic injection. Concurrently
potassium permanganate (2
grains) in stearin-coated pills is
given every quarter of an hour
until 32 grains have been taken.
Afterwards the dose of 2 grains is
repeated every two hours until the
stools become coloured; on the
second day 2 grains are given
every two hours for eight doses.
Weak calcium permanganate solu­
tion is also given occasionally, but
for the first three days the diet is
limited to barley water; after this,
first soup and then whey and jelly
are allowed, but no solid food until
a week after all symptoms have
subsided. In the two years prior
to the introduction of this method
of treatment 229 cases were treated,
with 113 deaths (49.4 per cent.); in
the first year of the new treat­
ment 261 cases were treated, with
55 deaths (21 per cent.), and in
the next six months 38 cases were
treated, with no death."—(Dr. T.
H. Bishop in The Indian Journal
of Medical Research, 1913, No. ii.
Quoted in the British Med. Journal,
1914, February 7th.)
THE HOUSE-FLY AND DIARRHEAL DISEASE AMONG CHILDREN.

"The question concerning the relationship of the house-fly to disease is one about which much is said, and at the same time concerning which very little has actually been determined. It is only in a few Southern communities, such as Jacksonville, Fla., Richmond, Va., and Asheville, N. C., that accurate scientific field studies have been made into the problem of disease carriage by these insects. The present study is probably the first definite attempt in this direction in a Northern community.

In this work, attention was paid to all forms of morbidity and mortality, but special emphasis was laid on obtaining accurate statistics concerning that group of disturbances with which it is most logical to associate the fly in Northern communities, namely, diarrheal diseases of infants. The results seem to indicate that the fly is a much-neglected factor in the etiology and transmission of summer diarrhea.

The work on which this conclusion was based was carried on during the past summer (1913) in the borough of the Bronx, New York City, in a neighborhood inhabited solely by Italians, and presenting the typical conditions associated with overcrowding, filthy streets, refuse-littered vacant lots, waste-strewn roadways, insanitary stables, etc. One area, inhabited by 311 families or 1,725 individuals, and containing a population of 362 children under the age of 5, was selected, and within this area every effort was made to eliminate the house-fly and to break the contact which the insect was supposed to make between filth and food. Another area containing the same number of families, was permitted to pursue its usual insanitary course.

Through nurses, supplied by the Bureau of Public Health and Hygiene and by the New York Health Department, careful records of all the facts of morbidity and mortality in the two areas were taken weekly for a period of eight weeks from July 21 to September 13. These findings were later compared and it is on the most significant of them—namely, those dealing with diarrheal diseases of infants—that the greatest emphasis should be placed.

The methods of opposing the activity of the house-fly may be briefly outlined. First, an educational campaign was carried on by nurses among the mothers in the first area selected. The oral injunctions of the nurses were supplemented by the distribution at frequent intervals of literature in Italian and English, describing and depicting house-fly dangers. Free tickets were distributed in the block admitting the people to a moving-picture theatre near by, where an arrangement was made by which there was displayed for a week the anti-fly picture film. The seventeen hundred doors and windows in the area were carefully screened. Under the auspices of the local Boy Scout organization, large fly-traps were constructed and placed in the courtways, yards, and stables.

In so small a number of children the mortality figures will be too few to be of any significance. On the other hand, the results of the work from the standpoint of diarrheal morbidity are striking and significant. It was found, for instance, that there were in the protected area twenty cases of severe diarrheal disturbances in infants under 5 years of age, while among the "outside" infants, in the same age-group, there were fifty-seven similar cases. The ratio here is nearly 1 to 3. It was found further that for the protected area the total days of sickness of diarrheal disease
among infants was 273 days, giving an average case duration of 13.5 days, while among the children of the "outside" families the total number of days of sickness was 984, with an average case duration of 16.5 days, indicating that not only was there more sickness of this character in the uncleaned area, but the lessened resistance of the infants is reflected in the greater severity and protractedness of the cases.

While it is believed that the elimination of flies had a great deal to do with the reduction of diarrheal disease among children, there is no doubt that the general sanitary improvement had a decidedly beneficial influence on the general physical welfare of all the people in the district. In the protected area there were 110 cases of sickness recorded; among the "outside" families there was a total of 165 cases. The ratio between the protected area and the unprotected one as regards non-communicable disease was 36 to 40. This leaves a ratio of 74 to 125 in the matter of communicable disease reported for the two districts."—(Dr. D. B. Armstrong in *Journal of the Amer. Med. Assoc.*, 1914, xiii, 200.)

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**Tropical Diseases.**

Under the charge of A. F. COLE, M.R.C.S., L.R.C.P.

**The Causes of Invaliding from the Tropics Amongst Missionaries.**

In this most instructive paper reported in the *British Medical Journal*, November 15th, 1913; and amplified in the Transactions of the Society of Tropical Medicine and Hygiene, Dr. Basil Price dealt with a total of 1,479 lives, of which 1,051 were from the medical records of the Church Missionary Society. The following figures compare the incidence of nerve conditions as a cause of invaliding in various countries.

**India, China, Japan, Africa.**

**Nerve conditions of neurasthenic type 20.6%, 25%, 81.25%, 20.8%**

<table>
<thead>
<tr>
<th>Country</th>
<th>Nerve Conditions</th>
<th>Mental Conditions</th>
<th>Tuberculosis, Pulmonary</th>
<th>Typhus</th>
<th>Sprue</th>
<th>Smallpox</th>
<th>Anæmia</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>47%</td>
<td>17.7%</td>
<td>16.6%</td>
<td>7.5%</td>
<td>4.8%</td>
<td>1.5%</td>
<td>0.9%</td>
</tr>
<tr>
<td>China</td>
<td>20.6%</td>
<td>12.6%</td>
<td>7.0%</td>
<td>2.5%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Japan</td>
<td>17.7%</td>
<td>15.9%</td>
<td>8.0%</td>
<td>3.0%</td>
<td>2.5%</td>
<td>1.5%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Africa</td>
<td>16.6%</td>
<td>18.0%</td>
<td>10.5%</td>
<td>1.0%</td>
<td>4.5%</td>
<td>2.9%</td>
<td>1.4%</td>
</tr>
</tbody>
</table>

The features most noticeable are:

1. Neurasthenia and mental conditions are the cause of about 25% of invalidings in most countries.

2. An especially heavy incidence in Japan.

As regards China the following table gives an analysis of 203 cases of invaliding amongst missionaries of all Societies.

**China.**

<table>
<thead>
<tr>
<th>Cause</th>
<th>North (25%)</th>
<th>Central (17.7%)</th>
<th>South (16.6%)</th>
<th>Total (68 cases)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurasthenia</td>
<td>47%</td>
<td>17.7%</td>
<td>16.6%</td>
<td>25%</td>
</tr>
<tr>
<td>Insanity</td>
<td>4.8%</td>
<td>12.6%</td>
<td>7.5%</td>
<td>8.8%</td>
</tr>
<tr>
<td>Enteric-dysent.</td>
<td>3.3%</td>
<td>7.0%</td>
<td>3.0%</td>
<td>5.8%</td>
</tr>
<tr>
<td>Typhoid</td>
<td>5.4%</td>
<td>2.5%</td>
<td>1.5%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Malaria</td>
<td>5.1%</td>
<td>2.5%</td>
<td>1.5%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Typhus</td>
<td>5.0%</td>
<td>4.5%</td>
<td>2.9%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Smallpox</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.4%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Anæmia</td>
<td>0.9%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

It is interesting to note the decidedly larger proportion of "nerve" cases which occurred in North China; perhaps some cause for this may be found in the drier atmosphere and also long periods of monotonous sunshine, which tend to promote at first increased mental and physical activity, but afterwards leads on to nervous irritability—a condition often hastened or exaggerated in many cases by the long-continued political unrest in that country, with the frequent reign of mob law and scenes of violence.
Insanity, characterized by mania, religious delusions, or melancholia, has unhappily occurred in all parts of China, but is most marked in Central China according to these figures. Tuberculosis, pulmonary in all but two cases, comes third on the list of most prevalent causes for invaliding, the usual cause being contact with infected cases; this disease will again be referred to. Enteric fever produces nearly 10 per cent. of cases. Paratyphoid was reported in 2 cases. From remarks made as to suspected cases of enteric abroad, it is an interesting problem whether strains of typhoid germs do not differ in various parts of the world; and, if this is the case, whether local strains would not better be used for antityphoid inoculation when landing in a country rather than be given in the homeland. One case of sprue was reported from North China, where it is generally considered non-existent, but the boundary between North and Mid-China is a somewhat vague one. Malaria is decidedly more prevalent in South China and Central China, and comes second in order of importance as to invaliding.

Finally, as regards the chief causes of invaliding, it will be seen from the subjoined table that disease incidence varies in the different parts of the world, but that Pulmonary Tuberculosis accounts for not less than 10.8 per cent in China, third in order of frequency; we all know well how many chances of infection there are in China where the sanitary instincts of the average patient are non-existent; it is a striking fact that amongst the 1,051 lives in the C. M. S. records only 7 invalidings were due to tuberculosis, but the writer of this unusually interesting paper seems to suggest that some Societies are less strict in their medical regulations than others as regards this disease; in dealing with the statistics from other Societies than C. M. S., Dr. Price states that he found a family predisposition or direct earlier personal infection in at least 35% of those invalided, and that this high percentage might have been much higher if details had been afforded in a number of cases.

<table>
<thead>
<tr>
<th>Class I</th>
<th>Nerve conditions of a neurotropic type</th>
<th>20.6%</th>
<th>25.0%</th>
<th>81.8%</th>
<th>20.8%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insanity</td>
<td>48</td>
<td>88</td>
<td>-------</td>
<td>1.5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class II</th>
<th>Enteric fever</th>
<th>16.6</th>
<th>0.8</th>
<th>8.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaria</td>
<td>12.3</td>
<td>11.8</td>
<td>19.4</td>
<td></td>
</tr>
<tr>
<td>Dysentery</td>
<td>6.4</td>
<td>5.9</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>Pulmonary tuberculosis</td>
<td>3.2</td>
<td>10.8</td>
<td>3.0</td>
<td></td>
</tr>
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<td>Smallpox</td>
<td>1.6</td>
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<td></td>
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<tr>
<td>Blackwater fever</td>
<td>-------</td>
<td>-------</td>
<td>9.7</td>
<td></td>
</tr>
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| Percentage due to Class II diseases (largely preventable) | 45.1 | 39.7 | 45.5 |

**INTESTINAL SCHISTOSOMIASIS IN THE SUDAN.**

British Medical Journal, February 7th, 1914.

In this paper Captain Archibald of the Wellcome Laboratory, Khartoum, describes four cases of Splenomegaly with fever and other symptoms, in which lateral spined ova were found, the so-called Schistosomum mansoni; he used autogenous Bac. Coli vaccines with apparent success, commencing with 250 million doses.

He writes as follows:

It is not beyond the pale of supposition to suggest that the enlargement of the liver and spleen in intestinal schistosomiasis might be dependent not only on the absorption of the toxins of the causal helminth, but also on the absorption of intestinal micro-organisms and their toxic products from the abraded surfaces of the intestine. If these micro-organisms play a prominent part then vaccine therapy would appear to be a feasible line of treatment, particularly in the acute toxic types of the disease. The beneficial results obtained in the two cases treated appear to justify a further trial, and it has occurred to me that the employment of autogenous vaccines of intestinal organisms might also be extended to cases of splenomegaly in which no apparent cause can be found. Richards and Day have recently described such cases of splenomegaly in Egypt, and it is of interest to note that a certain percentage of them showed a helminth infection.

Maxwell records similar cases of splenomegaly of obscure origin occurring in China, and Wooley, from his observa-

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**Tropical Diseases.** 231

<table>
<thead>
<tr>
<th>Chief Causes of Invaliding</th>
<th>India</th>
<th>China</th>
<th>Japan</th>
<th>Africa</th>
</tr>
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| Percentage due to Class II diseases (largely preventable) | 45.1 | 39.7 | 45.5 |
Surgical Progress.

Under the charge of A. S. Taylor, M.D.

SURGICAL SHOCK AND ITS PREVENTION.

One of the most important recent advances in surgical science is Crile's work on the prevention of shock. His theory of the cause of surgical shock is worked out along a line of clear philosophical reasoning, and is fortified at every step by convincing experimental proof. Extracts from his article in the 1913 volume of Keen's Surgery are given below.

Anoci-Association.

"Man is primarily a motor being, constructed by the process of adaptation to environment in the struggle for existence. There are two principal parts of this motor mechanism; first, the part which perceives his relation to the material world (environment); second, the motor mechanism itself, which is driven by environment. The adequate stimulation of the receptor mechanisms produces seeing, hearing, taste, smell, touch, pain, heat and cold sensations, and tickling sensations. It is through associative memory that this type or that type of response of the individual as a whole is made. A given stimulus, which causes an association may benefit the individual (bene-association), or it may harm the individual (noci-association).

Now as a surgical operation performed upon a patient whose receptor mechanisms are not suspended by anesthetics causes an adequate stimulation of one or more of the receptors, hence, causes a stimulation of the motor mechanism as a whole—that is of the insti-


tions of splenomegaly in the Philippines, is inclined to consider that some cases are dependent on a chronic infection originating in the intestinal tract, and that various organisms are associated with the clinical picture.

How far vaccine therapy may be serviceable in ankylostome fever remains to be determined. Definite proof is still lacking as to whether this fever is dependent on the toxins of the helminth or upon intestinal bacteria. Castellani noted that ankylostome fever was represented by three different types of pyrexia—a clinical fact which appears to support the view that different intestinal organisms and their toxins play a certain part in its production. It may be added that I have recently had very favourable results from the use of a coli vaccine in a serious case of ankylostomiasis.

Among other interesting points in intestinal schistosomiasis may be mentioned the frequent absence of eosinophilia. [cf. Schistosomum Japonicum, however.—Ed.] In the cases seen in the Sudan not one of them showed this blood change—a negative sign some-

what misleading, for it is generally understood that a helminth infection raises the number of eosinophiles in the blood. Low, however, in a recent paper states that chronic helminthiasis need not be productive of an eosinophilia. His experience was based on the examination of a number of natives in Uganda. Absence of eosinophilia must, therefore, not be taken as a contraindication to the examination of the urine or feces. In urinary schistosomiasis one has found that an eosinophilia is invariably present, even up to 50 per cent—a fact which may favour the theory of duality of the species of schistosomum.

Another point observed in the blood of these cases of intestinal schistosomiasis is the constant increase of large lymphocytes and a certain degree of leucocytosis affecting the polymorphonuclear leucocytes; indeed, the total number of leucocytes appears to be made up almost entirely of these two types of cells. The red blood cells show a certain amount of polikilocytosis, and one may obtain all the changes observed in secondary anaemias.
vidual as a whole. If the activity of the various receptor mechanisms is blocked or suspended, then the operation may be performed without stimulating the motor mechanism at all; that is to say, there will be no **noce-association**. That state is **anoci-association**.

When a barefoot boy steps on a sharp stone, there is an immediate discharge of nervous energy in his effort to escape from the wounding stone. This is not a voluntary act. It is not due to his own personal experience (namely, his ontogeny), but is due to the experience of his progenitors during vast periods of time—his phylogeny. The wounding stone made an impression upon the nerve receptors in the foot similar to the innumerable injuries which gave origin to this nerve mechanism itself during the boy's vast phylogenetic or ancestral experience. The stone supplies the phylogenetic association, and the appropriate discharge of nervous energy automatically follows. If the foot is repeatedly bruised, shock may be produced.

Although *no pain is felt* in operations under ether anesthesia, the nerve impulses set up by the operation still reach the brain. The vasomotor, the cardiac, the respiratory centers discharge energy in response to traumatic stimuli during operations under anesthesia. If the trauma is sufficient, exhaustion of the entire brain is observed; for the traumatic stimuli which reach and affect the awake centers in the medulla also reach and influence every other part of the brain.

There is strong negative evidence that the changes seen in the cells of the brain are caused by the stimuli that reach it through the nerve trunks from the traumatized area; for when these nerves are blocked by cocaine, there is no change found in the cells of the brain, nor is there shock seen even after severe trauma. The same thing is proved by animal experimentation. After division of the spinal cord, severe trauma below the divided area produces no histological change in the cells of the brain as is seen in every animal with nerve trunk undivided when so traumatized. Ether protects none of the brain cells from exhaustion from the trauma of surgical operations.

**The Cause of the Exhaustion of the Brain Cells from Trauma of Various Parts of the Body under Inhalation Anesthesia.**

Anesthesia per se (*i.e.*, ether anesthesia without trauma) showed neither shock nor change in the brain cells.

Among the unconscious responses to trauma under ether anesthesia are purposeless moving, withdrawing of injured part, or there may be an effort directed toward escape from injury. In a case of severe trauma without anesthesia, the nervous system would discharge its energy to the utmost in efforts to escape from the injury, and the individual would suffer complete exhaustion. If the traumatata under inhalation anesthesia be sufficiently strong and frequent, the brain cells finally will be deprived of their dischargeable nervous energy and become exhausted. Whether this energy is discharged by injury under anesthesia, or whether by ordinary muscular exertion, identical morphologic changes are seen in the nerve cells. In shock from injury, in exhaustion from overwork, and in exhaustion from pure fear, the general functional weakness is similar, and in each there are morphologic changes in the brain cells. In each case the altered function and form of the brain cells are due to **an excessive**
discharge of nervous energy. This discharge of nervous energy, with or without inhalation anesthesia, is determined by emotional and traumatic stimuli; and is in response to such stimuli."

Prevention of Shock.

The above outline of Crile's theory of the cause of shock makes it clear that the logical way to prevent shock is to prevent these harmful stimuli from reaching the brain. Crile wonderfully accomplishes this by eliminating the factor of fear, as far as possible, by a well worked system of pre-operative care and training of the patient, and by the use of morphine preliminary to the anesthetic. The harmful stimuli from the field of the operation are blocked off from the brain by use of a local anesthetic preceding every cut of knife or scissors, by careful handling of all abdominal viscera, so as not to pull on mesenteric attachments, by nerve blocking with local anesthetic where anatomically possible, and in using a local anesthetic such as quinine and urea hydrochlorate around area of wound to block off harmful stimuli during first few days after operation. Crile uses novocain combined with epinephrin as the usual local anesthetic. It is as efficient as cocaine and is less toxic. Cabot of Boston has just published a series of cases of supra-pubic prostatectomy with spinal anesthesia, showing complete absence of shock even in very unfavorable subjects. In these cases, all stimuli are blocked by the anesthetic in the spinal canal, and no noci-associations reach the brain. The local anesthetization, even though the patient be under inhalation anesthesia, should be as careful as if he were awake and one were trying to make a painless operation. A one per cent. solution of novocain is used for anesthesia of the skin, a quarter to a half per cent. for the subcutaneous tissue, and a one to two per cent. for injecting into the neighborhood of, or directly into, the sheath of nerves supplying the field of operation. Novocain can be sterilized by boiling without deterioration.
Preventive Medicine.

Under the charge of W. W. Peter, M.D.

FIGHTING TUBERCULOSIS IN ENGLAND.

In all there are over 450 approved institutions for the treatment of tuberculosis. And having found out what great things can be done, the building of others is rapidly progressing. Less than half of the 450 are devoted to resident treatment of the disease. Great emphasis is being placed on the work of the dispensaries, or non-resident institutions, which are in charge of tuberculosis officers, specialists in the early recognition of the disease. These officers are assisted by competent nurses and health visitors who see that instructions are carried out in the homes of the people. The cost of this extensive fight against tuberculosis in England is nineteen (19) cents gold per head.

"PRIVATE" DISEASES MADE PUBLIC.

Venereal diseases have been put on the notifiable list in Denmark, Utah, and New York City. This procedure is more or less experimental and has much to overcome in the way of inertia as well as active opposition (especially on the part of the afflicted) before it becomes universal. In New York City only 1,500 of the 8,000 physicians reported cases, and the Managing Boards of three large hospitals whose incomes were threatened went to the Mayor to get him to rescind the action of the Board of Health. The movement seems to be at a standstill in New York, but it is spreading elsewhere. Resolutions have been introduced in Canada making it a government law to notify venereal diseases.

ANTI-PLAGUE VACCINE.

The Bombay Bacteriological Laboratory has recently issued a report stating that 700,000 doses of anti-plague vaccine were made and distributed in 1912 to China, Africa, Java, and India.

ANTI-TYPHOID VACCINE.

After considerable opposition, anti-typhoid vaccination has been made compulsory in the French army.

HELPING ENGLISH SCHOOL-CHILDREN.

There are over six million schoolchildren in the public elementary schools in England. Those suffering from (1) serious defects of vision, (2) adenoids, inflamed tonsils or enlarged cervical lymph-nodes requiring surgical treatment, each numbered respectively 10%; from suppurring ears, and from defective hearing from 1.5%; while 1% have tuberculosis of readily recognizable form. More than half needed dental treatment. As a careful study brings facts to light, increasingly efficient measures to safeguard the health of the school children are being instituted throughout the country.

PUBLIC HEALTH LEGISLATION, AN EVOLUTION.

In the same issue of the Journal of the American Medical Association (March 21st) there are these two conflicting reports:

"The logical order for the consideration of public health legislation would be something as follows:

A Board of Health must be created
or a responsible health officer of the state appointed before anything else can be done. After the health machinery of the state is completed, the first and most important thing is to find out what diseases are killing the people in the state and how many births, deaths, and marriages are occurring. This law should also provide for the reporting of such cases as may seem advisable. The next important work is the sanitary survey of the state with a view of determining the causes of sickness and how they can be removed. Definite laws creating—or at least authorizing—city and country health organizations are of the first importance after the state health machinery has been established."

The second, the conflicting, report is of the replies received to this question: "What are the first ten essential subjects on which the state should legislate in order to protect its citizens against disease?"

Governors, justices of supreme courts, college presidents, lawyers, teachers, 424 doctors,—1,071 men and women in all were asked the above question in the course of a study of public health legislation being carried on by the American Medical Association. The subjects which received the largest number of votes are:

- Tuberculosis (407 votes).
- Health inspection of schools.
- Milk and dairy.
- Contagious diseases.
- Food and drugs.
- Reporting venereal diseases.
- Public health (not stated just what form).
- Vital statistics.
- Habit forming drugs.
- Board of Health (204 votes).

It will be seen that in these two reports the place of importance of "Boards of Health" in legislation is just reversed. This conflict is only apparent, however. When public health legislation is first taken up in any country, naturally the first thing is the creation of some Board of Health. But in a number of years public sentiment will have crystallized on this subject, and other health subjects will become pressing. So in America the people are clear what about Boards of Health, but they are just finding out what about Tuberculosis. In several tens of years ideas will be quite fixed on Tuberculosis and worry will center on some phase of eugenics or something else. Public health legislation is an evolution.

FOR EFFICIENCY.

A national health survey is being undertaken in the United States. No one knows in a national way just what are the public health conditions, except as local reports are patched together. No one knows just what relationships exist between federal, state, county, and municipal public health activities. In addition there are many voluntary organizations. For years the public has become increasingly intelligent regarding the need for public health work. Now there is to be an attempt at increasing efficiency in doing the work.

All public health organizations will have their work charted. Overlapping will be discovered, equipment and methods standardized. The total cost will be made public. And the efficiency of each needed organization will ultimately be increased.
To the Editor of

"THE CHINA MEDICAL JOURNAL."

Dear Editor: I am enclosing for the Journal, a copy of the Regulations issued by the Board of Interior regarding human dissections and post-mortem. That the matter is no mere paper affair is attested by the fact that the Union Medical College has already obtained two bodies for purposes of dissection, and it would seem that we are likely to have all we can use.

As soon as a copy of the Regulations was given us I had a petition sent into the Board of the Interior asking them to allow us a body for dissection, and within ten days from the sending of the petition, we had our first body from the prison authorities.

This marks such a great step forward in medical education, that I thought the profession in China would be glad to hear of it, as other places may make use of the Regulations to secure similar opportunities.

Our students are all very keen to get on to the dissecting, but we feel that we must be very careful for a time till the thing is well established, otherwise we might have the privilege withdrawn.

Yours sincerely,

J. G. Cormack,
Principal of the Union Medical College.
REGULATIONS OF THE BOARD OF INTERIOR.

We have determined on five regulations regarding dissection which we now especially proclaim.

Regulations of Dissection.

1. A physician, in a case of death from disease, may dissect the body and inspect the diseased part to determine (examine) the origin of the disease, but he must first obtain the consent of the relatives of said corpse and clearly inform the local magistrate before proceeding to dissection.

2. The police and inspectors, in case of mysterious death, the cause and origin of which cannot be accurately ascertained without dissection, may appoint a physician to dissect said corpse.

3. The bodies of all those meeting death by punishment or dying in prison from disease, without relatives or friends to claim their bodies, may be given by the local magistrate to a physician for dissection, to be used for the purpose of experimentation in medical science, but after dissection the body must be sewed up and buried.

4. If any are willing for the benefit of science to offer their bodies for dissection and leave word to that effect before death (they may do so), but the whole body must be sewed up and returned to his or her family after dissection.

5. These regulations are in force from the day of their proclamation.

T'SINANFU, 9th April, 1914.

To the President of the C.M.M.A.

DEAR SIR: The letter from Dr. Wenham which you have published in the current number of the JOURNAL claims the most serious attention of all who are interested in the subject of medical education in China, and the reasons which he has put forward for the use of English as a medium of instruction, at any rate in the Peking School, are extremely pertinent and cogent. This question, however, raises very vital issues, and, as an Association, we would certainly do well to look very carefully ahead, and be thoroughly clear as to the goal towards which we are striving, before committing ourselves to a policy which we might ultimately regret.

We shall all agree with Dr. Wenham that we are not doing our duty to China, nor fulfilling our commission as Christian missionaries, unless we give her the very best that we have to offer, and a strong case can certainly be made out to prove that that best can only be given through the medium of English. But it seems to me that the great criterion by which all our work must be judged is the crucial question: "Are we building on a stable foundation and erecting a permanent edifice in the country?" In short, will our work prove lasting and efficient?

It is certainly true that in the present state of medical education in China instruction in English (to such students as have sufficient knowledge of the language) could be carried on to a far more efficient degree than in Chinese, and such men would thus have the whole realm of Western medical literature open to them. It is quite likely, too, as Dr. Wenham suggests, that such men would become leaders in medical work in the country. But there is one vital point which I think we must not lose sight of. We are here in China, not to help create a medical autocracy, but a Christian medical profession. It is not a small exclusive band of English-trained, English-thinking doctors who are necessarily going to do the greatest service to their native country, but the native-born men who have been taught to think along scientific lines by a development of their own language, and the cultivation of modern ideas.

This at once raises a second point where also, as it seems to me, the exclusive use of English in our chief medical school would entail very serious loss. I refer to the failure to enrich the Chinese language. Anyone who is connected
Correspondence.

Correspondence.

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with a medical school in China
knows quite well that a foreign-
trained Chinese physician would be
utterly useless to teach the students
in such a school until he had
"learned the language!" All his
medical ideas—his terminology—his
scientific expressions—are locked
up in a foreign tongue, and as far
as he is concerned, his own native
language will be none the better
for the wider education he has
received. And the same would
probably be true of our English-
trained students in China. Whilst
the whole range of medical litera-
ture will be theirs, one cannot but
fear that their own contribution
towards the medical knowledge of
non-English-speaking Chinese stu-
dents will be extremely little; and
instead of Chinese being permanent-
ly enriched by a more adequate
and up-to-date vocabulary than our
Association has so far given us
(which, good as it is, we all admit
to be sadly deficient), the best that
such men will be able to offer is a
continuance of the present race of
hybrid books, with copious English
words interspersed amongst Chinese
characters, such as China is now
being necessarily flooded with on
every academic subject.

It seems to me that, given stu-
dents of sufficient preliminary train-
ing to be able easily to read and
understand English books, the ideal
method would be to continue teach-
ing in Chinese as heretofore, but to
give all technical terms bilingually;
so that just as all our students are
at present learning to know the
names of drugs (possibly, also, anatomi-
tical terms) in Latin as well
as Chinese, this "English class"
would, in addition, learn all its
medical phrases and technical terms
in both Chinese and English. This
would mean that not only would
these men be able to read and enjoy
Western medical books, but they
would also be in the closest possible
touch with their non-English-speak-
ing fellow students, and would be
able, as no one else, to contribute
towards the enriching of the Chinese
medical language, the revision of
medical nomenclature, and the es-
ablishment of a worthy medical pro-
ession indigenous to the country.

I am, yours, etc.,
HAROLD BALME.

April, 1914.

DEAR MR. EDITOR: Is it a fact
that the chief reason for the low
Post Mortem
Professional stand-

Examinations.

ar  °. VleS. e
medical men, both
of the old school and of the new,
is the practical absence of post-
mortem examinations? And if it
is true that in this country foreign-
trained physicians also tend to be-
come more empirical and less scien-
tific, with a few grand exceptions,
may not this also be due to the
same cause. For none of us will
deny that in amplification of the
proverb "Dead men tell no lies"
most of us have had sound truth
told to us in the post-mortem room,
truth about our mistakes in diag-

nosis and treatment. So I am
writing this letter to you, Sir, to
suggest that as example is often
the surest
example is often
the surest
example is often
the surest
example is often
the surest
example is often
the surest
to teach, each one
of us medical missionaries should
whenever possible and expedient
try to obtain autopsies. That in
some places it will not be possible
is very elear: but that in others
it is possible is equally certain.
And finally if we are convinced of
its great value, should we not as
men and women trying to live for
China make such testamentary or
other arrangements that if it should
please God to call us away by
death our bodies may help to teach
others; one example is better than
many sermons.

Yours sincerely,
"STRANGER."
PERSONAL RECORD.

BIRTHS.
At Kioshan, January 12th, to Dr. and Mrs O. S. Behrents, A. L. M., a son.
At Peking, March 3rd, to Dr. and Mrs. F. F. Dille, a son (Dudley Allen).
At Taikhsien, Shansi, to Dr. and Mrs. W. A. Hemingway, A. B. C. P. M., a son, (Stephen Riggs).
In England, February 20th, to Dr. and Mrs. Dansey Smith, a son (Neville).
At Shanghai, March 21st, to Dr. and Mrs. W. E. Taylor, Y. M. C. A., a daughter.

ARRIVALS.
March 9th at Shanghai, Dr. and Mrs. C. M. A. Wassel, A. C. M., Wuchang.
March, Dr. C. C. Elliott and family, Paoning, Sze.
March 13th at Shanghai, Dr. Mary F. Newell, W. U., Shanghai.

DEATHS.
At Kaifengfu, April 7th, Dr. S. H. Carr, C. I. M., of typhus.

NOTICES.
After the first of June, 1914, please address all business communications regarding the CHINA MEDICAL JOURNAL to the Business Manager, Dr. J. A. Snell, Soochow, China.

UNION MEDICAL COLLEGE, PEKING.
The annual entrance examination of students wishing to enter this College will be held on Tuesday, 1st September, 1914.

Intending candidates are requested to report themselves at the College not later than Saturday, 29th August.

KULING SANITARIUM AND HOSPITAL FOR CHINESE

The Kuling Medical Mission is now in the new hospital building, and is ready to receive patients. The Mission has long felt the need of providing accommodation for tubercular patients. To meet this growing demand, rooms have been prepared in the Hospital to receive such persons.

Single rooms, $5 a week.
$16 a month.
Double rooms, $3 a week each person.
$10 a month each person.
Small ward for Christian workers.
$1 a week.
$5 a month.
Rice $1.50 a month with special care that nourishing food is provided.
Milk will be furnished extra at cost when prescribed.
Medicine will be furnished at low prices.

NOTE.—Unless guaranteed by some Mission the payments must be made in advance. All inmates of the hospital must be subject to the rules which the attending medical officer may see fit to make.

LEILA L. BERKIN.
Treasurer

The London School of Tropical Medicine

(UNDER THE AUSPICES OF HIS MAJESTY'S GOVERNMENT)


In connexion with the Hospitals of the Seamen's Hospital Society.

SESSIONS commence 1st October, 15th January, and 1st May.

For prospectus, syllabus, and other particulars apply to the Secretary.

P. MICHELI, C.M.G., Seamen's Hospital, Greenwich, S.E., Eng.